

Mergers and Acquisitions Motives

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In this paper I analyze and summarize a broad list of different merger motives that has been proposed in the literature. I propose a categorization of such motives based on the residual claimant of the mergers gains, namely the owners or the managers of the merging firms, and on welfare effects. I also review the different empirical methods that have been proposed to investigate for merger motives, gains and effects.

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1.1. Introduction

In this chapter I summarize and analyze a broad list of different rationales that have been proposed as motives for mergers and acquisitions. Some of them rely on the theory of industrial organization and refer to enhancement of the market power, efficiency gains and preemptive motives. Some others rely on corporate governance theories and refer to motives such as the correction of internal inefficiencies, agency problems and capital market imperfections. To facilitate our exposition I have classified the list of merger rationales into two main groups. The key distinction between these two groups of merger motives is the effective claimant of the (seeking) merger gains. The first group includes drivers that increase the value of the merging firms because they raise actual or future profits and in which the effective claimants are therefore the owners of the firms, i.e., the shareholders. The second group includes a list of rationales that go in the interest of the manager of the firm and not necessarily in the firm's value. That is, the rationale in these mergers is to increase the acquiring firm manager's wealth even if this may result in a decrease of the firm's value. This distinction is important because making a firm more valued by means of efficiency gains or the exercise of market power implies welfare effects. In contrast, managerial gains should not reflect any welfare effect and should therefore not give rise to any antitrust concern.² None of these motives need to be the rationale of a merger nor should they be considered as exhaustive.

We also review the different empirical methods that have been proposed to investigate for merger motives and evaluate merger gains and effects. I group them too into three categories according to the different statistical tools and databases they employ. Two of them perform *reduced-form* analysis of either stock market prices or accounting profits as measures of profitability. The third one performs *structural-form* analysis of oligopoly models of competition to analyze economic profits. The first two techniques make use of cross sectional and/or panel (cross sectional alongside time) datasets involving several mergers and acquisitions that are not necessarily related among each other. The remaining category makes use of data (cross sectional or panel) concerning the specific merger taking place, that is, the analysis in on a *case-by-case* basis.

²In our classification, some rationales to merge that belong to the first group do not necessarily imply any welfare effect either. These motives are the financial costs savings and the disciplinary takeovers. See 1.2.1.4 and 1.2.1.7.

Before listing the different motives behind mergers and acquisitions I consider relevant to first define what these transactions are at all. Even though both terms, mergers and acquisitions, refer to corporate reorganizations that serve to transfer ownership control from one firm (the target) to the other (the acquirer), strictly speaking, they are different. Their distinction is however sometimes ambiguous. Hirshleifer (1995) affirms that both transactions fall into the more general concept of *takeovers*. In turn, takeovers may be *friendly* or *hostile*. Jenkinson and Mayer (1994) state that it is when the target firm's manager initially rejects the acquisition offer that the takeover turns into hostile. The explicit difference of mergers and acquisitions relies on how the transaction is announced to the target company and on how the new corporation structure results affected. In mergers, the takeover bid is proposed to the representative manager of the firm and in acquisitions directly to the owners of the firm (the shareholders). That is the reason why acquisitions also fall under the heading of *tender offer*, i.e., a takeover bid in the form of a public invitation to shareholders to sell their stock. Then, in acquisitions shareholders make independent decisions about their own shares. Once the bid is accepted, the new entity might be legally combined but not necessarily economically combined because the merged firm may still run separate plants. Some times the term acquisition also refers to those deals in which the acquirer only buys minority shares or voting rights of the target. That is, acquisitions also refer to cases in which only part of the company is bought. In contrast, in mergers shareholders altogether vote to make a collective decision about the proposed bid. According to Hirshleifer (1995), in mergers the involved firms cease to have separate identity and combine to one surviving entity.

Most empirical studies that use large samples of mergers and acquisitions to evaluate the gains and effects of mergers do not explicitly distinguish among these two types of deals. In case-by-case studies, analysts refer to mergers and not to acquisitions, either because they consider them as equal, or because they are built up from theoretical oligopoly models for which the previous distinctions are not relevant in the analysis.

In both, the theoretical and the empirical literature, another distinct classification of mergers has been extensively employed. This classification does not refer to motives but to *types*, which differ according to the business structure of the merging firms. See Hughes (1980), Tirole (1988) and Shy (1995). Mergers are defined as horizontal, vertical and conglomerate. Mergers are considered as horizontal when the two companies are in direct competition and share the same product lines and markets. They are considered as vertical when one is a customer of the other, i.e., when they have a downstream-upstream structure in which the former buys inputs to the latter to produce the final output. Finally, mergers are

considered as conglomerate when firms are in different markets and/or do not have business lines in common. In practice, when performing empirical studies, the type of the merger is determined by matching their SIC (standard industrial classification) digits. For instance, if the 4-digits of the two firms coincide, the merger is considered as horizontal, if the first 2-digits coincide, the merger is considered as vertical, and when none of the 4-digits coincide, the merger is said to be conglomerate.³

According to Martin Lipton (2006) mergers emerged at the end of the nineteenth century in the US and since then, they have occurred in waves. Each wave is characterized by a concentration of the type of merger and specific industries. The very first wave started with horizontal mergers at the beginning of the 1900s and it has been called the wave of *mergers for monopoly*. The reason for the monopoly adjective is that many firms with small stand-alone market shares consolidated forming high concentrations. These corporations used the word *trusts* for their business arrangements and big trusts became big monopolies which ended up raising anticompetitive concerns. This is what led the emergence of the *antitrust* law in the US. The industries involved in such consolidations were mostly the Steel Oil, Railroad, Telephone and Mining. The strict antitrust enforcement starting in the 1904 and the first world war might have been the factors that stopped this wave of mergers. The second merger wave took place also mainly in the US during the decade of the 1920s and was characterized by vertical mergers. During this period, the giant automobile manufacturers emerged and the public utility sector was particularly involved too. Ford, for example had integrated railroads and steel suppliers, among others, to the end-user production stage, i.e., the assembled car. It seems that the 1929 Crash and the Great Depression determined the end of this wave.

Later in the 1960s a third wave of *mergers of conglomerates* with purposes of diversification was observed. Many major established companies adopted the diversification concept and spread out their business lines into new industries and areas of research activity. Because of the proper character of diversification many industries were involved in this wave. The stocks of conglomerated companies significantly decreased at the end of the 1960s which induced a break in the growth of these transactions. The fourth wave, occurring in the 1980s has been called the wave of *disciplinary mergers*. Hypotheses of the *market for corporate*

³A merger case may well involve all aspects in a single transaction, that is, it can have a horizontal, vertical and conglomerate dimension at the same time. An example is the General Electric (GE)/Honeywell merger proposed in 2001. The horizontal dimension was present because both firms competed in the jet engines market. The vertical nature was present because both firms have a manufacturer-retailer relationship. The reason is that Honeywell produces engine controls used by GE in the production of engines and GE is a buyer of Honeywell products since the former buys aeroplanes through its subsidiary company GECAS. Finally the conglomerate aspect was present because in several product markets only one of the merging firms is present (since they are both multiproduct firms).

control from the corporate governance theory where applied here to understand this merger wave. The *disciplinary* adjective is due to the fact that these mergers largely occurred in a hostile takeover environment which involved a replacement of the target's manager. The most affected industries of this wave were the Banking and Financial Services ones.

In the 1990s, a fifth wave involving size increasing mergers has been observed. The drivers of these deals appeared to be the conviction that size matters to compete in the market. Many of the most prominent mergers were neither purely horizontal nor purely conglomerate. Rather they presented *market extensions* of companies in the same industry that served different and currently non-competing markets. Mitchell and Mulherin (1996) affirm that the key factors facilitating this wave were market deregulation and privatization. Andrade Mitchell and Stafford (2001) affirm that another important factor facilitating this wave was the technology shock of the internet revolution. The most remarkable mergers of this wave were concentrated in the Banking and Financial Services as well as in the Telecommunications, Entertainment, Media and Technology industries. At the end of 2000 this wave experienced a slowdown apparently due to a collapse in the internet stocks and the earnings and financial problems of the Telecommunications industry. Finally, from 2002 to nowadays a considerable increase of *giant* mergers has been observed worldwide in the Telecommunications industry again. Until now, the turmoil of the credit market in the US and the instability in the worldwide stock markets have not interrupted this wave of mergers. The reason might be that such downturn in the financial market makes targets less expensive and so the right moment to buy.

What about the welfare consequences of mergers? Economic theory and antitrust practitioners often regard welfare as consumer surplus rather than overall economic surplus (including producer surplus). They evaluate then the effects of mergers on the involved market products' prices, quality, diversity of choice and innovation (new products) since these are the factors that directly affect consumer surplus. This assessment is based on the type of the merger. Motta (2004) summarizes that, whereas horizontal and vertical mergers possess antitrust concerns, conglomerate mergers do to a less extent because they do not necessarily have an impact on the product market and therefore on welfare (unless there is a concern of *portfolio effects*, see section 1.2.1.5.4).

More specifically, in vertical mergers, competitive effects depend on the structure of the downstream and upstream markets. For instance, when the upstream firm is a monopoly in the input market, the major concern to antitrust authorities is the possibility of foreclosure of downstream outsiders. The reason is that foreclosure may soften competition and facilitate

raising prices. Other models of vertical mergers that involve markets with one manufacturer and intra-brand competition (competition among retailers that sell the same product or brand) predict an increase in consumer surplus. The reason is that the elimination of double marginalization results in higher joint profits with lower final prices due to lower price-costs differentials. In vertical mergers in which there is inter-brand competition (several manufacturers selling through retailers), vertical integration might relax competition between manufacturers, and between retailers resulting in higher than competitive prices. That is, in markets with this structure, vertical mergers might favor collusive agreements and deter entry. For an extensive discussion of vertical mergers effects see chapter 6 of Motta (2004).

On the other side, the major concern in horizontal mergers is the reduction of the number of competitors because of the general thought that higher concentration implies higher market power. However, it has been acknowledged that, in differentiated products markets, tough competition may rule the market even when only two firms compete. The reason is that in these markets the degree of competition depends on the differentiation of the product rather than on the number of competitors. Then, the extent to which the merging firms will increase prices will depend on the degree of substitution between the merging products and the remaining ones. More specifically, the potential enhancement of market power due to a horizontal merger is analyzed under the *unilateral effects* or *coordinated effects* of the merger. While coordinated effects refer to the scope of collusion, facilitated by the lower number of competitors, unilateral effects refer to the risk that the merged firm, acting independently of any remaining rivals, finds profitable to raise prices after the merger. Oligopoly models of competition regarding at merger unilateral effects predict that whenever the merging products are substitutes and the market is composed of symmetric firms, prices in whichever mode of competition (in quantities with homogeneous goods or in prices with differentiated markets) will increase.⁴ In turn, the factors that would impede such adverse effect on prices are free entry, efficiency gains and product repositioning. See section 1.2.1.5.1.

Predictions of horizontal merger effects within models involving collusion (or coordinated effects) are more complex (see 1.2.1.5.2.) because they include not only the number of competitors and barriers to entry but also other considerations like the frequency of interaction among firms, the transparency of the market as well as the costs (a)symmetry among firms. The reason is that the key issue when assessing the profitability of collusion is

⁴ If the merging firms sell complementary products, economic theory predicts that post-merger prices will be reduced.

to compare the loss of profits a firm will incur on if it deviates from collusive equilibrium. In general these models predict that, the smaller the number of competitors and the remaining mentioned factors facilitate collusion. More dynamic factors such as a growing demand, demand fluctuations and business cycles, growing technologies and innovation are to be considered as well in these models. While a growing demand facilitates collusion, the remaining factors hinder collusion. Other aspects to include in the analysis are asymmetries in capacity constraints, the presence of multi-market contacts and vertical differentiation. The three of them hinder collusion. Lastly, in these models the effect of horizontal differentiation on consumers' welfare is ambiguous. For a detailed discussion of the unilateral and coordinated effects of horizontal mergers see Ivaldi et al. (2003a and 2003b).

Finally, conglomerate mergers are revised under the *portfolio theory* of merger effects. Welfare concerns arise when the merging firms produce complementary products and at least one of them already enjoys market power. The scope of enhancement of market power depends however on several other factors such as the possibility of bundling (provided rivals cannot bundle), an increase of rivals' costs, etc. For an extensive discussion about the portfolio effects in conglomerate mergers see the OECD Best Practices Roundtable of Portfolio Effects in Conglomerate Mergers (2002).

Note that motives and effects of mergers are, first of all, different concepts (the former is *ex-ante* and the latter is *ex-post*). Second, they may not necessarily be in the same direction. For example, a merger searching for market power (motive) might not carry out higher prices (effect) because rivals firms might increase production in response to the decrease in the merged firm's output, ending up, with lower profits (effect). Also, in the assessment of merger motives one has to keep in mind that they are not exclusive to types of mergers. That is, the efficiency gains motive can be a driver to horizontal, vertical and conglomerate mergers. The market for corporate control motive can be found in any type of merger too and so on. Important to mention as well is that motives in mergers are not exclusive to each other. Mergers in search of strengthening market power may also be motivated by efficiencies or synergy gains (to afterwards enhance market power). A merger motivated by the enhancement of market power through collusion may also be motivated by cost savings through rationalization between a low and a high marginal costs firm. A disciplinary merger undertaken through the market for corporate control might be motivated by financial cost savings and so on.

1.2. Merger Motives

In what follows I classify the distinct merger motives to simplify the exposition. Recall that one motive is not exclusive to another. Section 1.2.1 lists the merger drivers that increase the value of the firm and section 1.2.2 those that increase the wealth of the manager.

1.2.1. Shareholder Gains

By shareholders gains I refer to the increase in the market value of the firm due to the merger. Since the increase in the value of the firm directly benefits its owners (shareholders) it is said that shareholders gain. A firm may increase its market value by increasing its profits. Increasing profits, in turn, is possible by decreasing costs, operating more efficiently, implementing optimal incentives to managers or enhancing market power. These merger rationales that produce gains to shareholders are exposed from section 1.2.1.1.1 to 1.2.1.7.2.

1.2.1.1. Efficiency gains⁵

Farrell and Shapiro (1990 and 2001) distinguished efficiency gains in technical efficiencies and synergies. They defined technical efficiencies as those that could be obtained by other means than merging, in particular, by internal growth, joint ventures, specialization agreements, licensing, etc. According to the authors, technical efficiencies correspond to changes within the joint production capabilities of the merging parties. In the short term, they can be achieved by a reallocation of output across the merging units or scale economies if capital is mobile. In the longer run, they can be achieved by undertaking investment on a larger scale. On the other side, synergies are defined as efficiencies obtained through the close integration of the merging firms' *hard-to-trade* assets, and are inherently merger-specific (see 1.2.1.2) since such assets cannot be acquired otherwise than merging. The following three drivers that generate efficiency gains belong to the technical efficiencies definition.

1.2.1.1.1. Economies of scale

A firm is said to have economies of scale when its average cost decreases as total output increases. More strictly, economies of scale arrive when the higher the production, the lower the marginal cost. In the short run, when physical capital is held fixed economies of scale make production less expensive. In the long run, they may result from the coordination

⁵ For an excellent and more detailed explanation and classification of efficiency gains from mergers see Roller, Stennek and Verboven (2006).

of the merging firms' investments in physical capital. So, short-run economies of scale may result from mergers because joining two firms allows getting rid of double fixed costs, i.e., costs that involve administrative tasks, customer service, billing, etc. The reason is that the larger firm will have after merger one single *team* in charge of these tasks instead of two. Short-run economies of scale can also be achieved by a reallocation of output across different units of operation of the merged firm. In the long-run, economies of scale result from the merger if the increase in output more than doubles the increase in all the inputs. This might arise when a larger and financially stronger firm invests in new technologies that substantially improve its production process and its research and development areas. See Tirole (1988).

1.2.1.1.2. Economies of scope

Economies of scope are economies of scale generalized to multi-product firms or to firms related by a chain of supply. They are reached if the average cost of producing two products separately falls when the products are produced jointly. More technically, economies of scope exist when the higher the production of say, *A* the lower the marginal cost of *B*, provided *A* and *B* are related in one way or another within the same firm. See Motta (2004).

1.2.1.1.3. Economies of vertical integration

Economies of vertical integration are revealed when the sum of the cost of separately owned stages of production falls when a single firm performs the two stages of production. These cost savings can be localized in the technical relationship between the two stages of production or in the market transactions costs (distribution costs). For instance, acquisitions of technical support, promotion, training, equipment and financing are often seen as factors generating efficiency gains from vertical integration. Vertical integration can also be seen as an instrument to prevent opportunistic behavior among firms that have common investment contracts (one firm abandoning the investment project before it ends) that would be possible otherwise (if firms remain separated). In this context, positive effects on specific investments that manufacturers and retailers may have together are also presented as an argument of efficiency gains in vertical mergers. Also, when an upstream firm finds it difficult to induce retailers' behavior on its own interest, vertical integration can be an alternative to vertical restraints (i.e., quantity discounts, resale price maintenance, exclusivity contracts, etc.), by doing so, operation costs decrease and thus efficiencies of vertical integration are revealed. See Motta (2004).

1.2.1.2. Synergy gains

Synergies are efficiencies that can only be achieved by merging, that is, they are merger-specific. Synergies are generally associated with a shift on the production possibilities of the merging parties that go beyond technical efficiencies (associated with changes within the joint production capabilities of the merging parties, i.e., economies of scale or scope). There is a general recognition that synergies involve either a process of learning, the close integration of specific *hard-to-trade* assets or a transfer of know-how among the merging firms. For example, when a small firm launches a new product but lacks of large scale sales, marketing and reputation, merging with a well established firm will most probably bring it gains that would have not been possible without merging. The diffusion of know-how, in turn, can be achieved when the merging firms exchange different R&D activities, patents, human skills, and organizational culture. Since these assets are in general non-tradable, firms can benefit from their combination uniquely by merging.

1.2.1.2.1. Diffusion of know-how

If the merging firms have different technological capabilities, human capital, organizational cultures, patents, or simply know-how and it turns out that they are complementary to each other; then, by putting them together, they will most probably achieve a technological progress. Such a technological progress can take the form of product or process innovation. See Roller, Stennek and Verboven (2006).

1.2.1.2.2. R&D

As well as know-how, R&D is a very powerful non-tradable asset that combined in better ways (by merging with a complement) may allow for a technological progress and an increase in the firms' joint production possibilities. According to Roller, Stennek and Verboven (2006), an acquiring firm may see a high R&D target as a faster mean of investment on R&D than internally expending on it. Indeed, often merging firms claim that by integrating their R&Ds they will faster introduce new or better quality products and innovate in cost reducing processes.

1.2.1.3. Cost savings

Cost savings is a very general concept that may be attained in many distinct ways. What is important for the analysis of merger motives is to identify the type of cost saving, i.e., if it consists on a reduction of average or marginal costs of production, fixed costs or financial

costs. Fixed costs are those that do not vary with production but that are necessary to produce. They include for instance administrative support, public relationships, maintenance of property plant and equipment, salaries, advertising, etc. Average costs vary with production, by definition they are total costs divided by total production. More often employed in the economic literature is the concept of marginal costs which stands for the increase in costs with one extra unit of production. Finally, by financial costs I refer to those costs that only affect the distribution of costs within the firm's administration but not the cost of production. Thus, whereas financial costs savings do not imply a saving of productive resources in the economy, average or marginal costs savings in the form of economies of scale, scope and vertical integration do. Acquiring a high R&D target or a target with patents instead of directly expending on it, is another way of saving costs. Transferring more efficient technology from one firm to another clearly decreases total costs. The elimination of the duplication of fixed costs when merging will, of course, decrease costs as well. Other examples of cost savings that have been proposed as merger motives are:

1.2.1.3.1. Rationalization

Rationalization consists on a more optimal reallocation of production across the different lines of production of the merging firms. That is, shifting production from a plant with higher marginal costs to another with lower marginal costs, without necessarily increasing the joint technological capabilities, is a mean to save costs.

1.2.1.3.2. Purchasing power

Cost savings may arrive when firms at the downstream level of production merge to increase their bargaining power towards their providers of inputs (firms at the upstream level of production). That is, by increasing its size, a downstream firm may also increase its buyer power and obtain quantity discounts or just better prices from their upstream suppliers. This practice would clearly imply a cost saving for the new merged entity.

1.2.1.3.3. Creating internal capital markets

This hypothesis states that if external capital markets (stocks, securities or banks) are not sufficiently efficient to create value, then by building up an M-form larger firm that creates an internal capital market, value will be generated. See Tirole (1988). The M-form firm refers to a multidivisional structure of the firm. That is, to a firm is composed of several product lines or geographic areas called divisions. These divisions are owned altogether by a single corporation but are decentralized and their operational decisions are independent

among them. However, there is a single authority (headquarters) that audits and allocates resources among the competing (or complementary) separated divisions. Thus, it is thought that by merging divisions to create the M-form firm a more efficient allocation of capital among divisions will save the higher costs of operation incurred when divisions remain separately owned. The necessary condition to generate additional value here is to have a superior entity that controls the reallocation of resources among the firms (the divisions). The reason is that, in internal capital markets, the residual control rights of managers increase headquarters' monitoring incentives and improve capital allocation (relative to the external capital ones). In sum, the alleged motive in these mergers is to create a new larger firm that combines the merging firms' (divisions) capital and reallocates it in a more efficient way to generate costs savings and thus larger profits.

1.2.1.4. Financial cost savings

Too high financial costs may be a motive to merger as well. According to Roller, Stennek and Verboven (2006), financial costs savings do not generate *real* cost savings (savings in productions costs); instead, they involve redistributive cost savings. That is, financial costs do not necessarily imply a value increase in the merging entity; they only reflect a redistribution of wealth from shareholders to debtholders. Among other ways they can be attained by saving on:

1.2.1.4.1. Taxes

Mergers before the 1980s were strongly motivated by tax advantages. The reason is that at the time when an acquisition premium was paid above the values at which a company's depreciable assets were recorded in tax accounts, the acquired assets could benefit of higher depreciation charges, protecting the acquirer from tax liabilities. Until reforms were passed, acquiring companies making such acquisitions could normally escape immediate capital gains taxation. Such tax advantages had an important role in many merger decisions, but not critical enough to determine whether merger would or would not occur. Nowadays there is a tax rule that differentiates the tax liability according to the accounting method by which the acquisition is registered (purchase of assets or pooling of interest).

1.2.1.4.2. Interest rates

Often small firms cannot borrow at competitive interest rates due to liquidity constraints or to asymmetric information in the external capital market. Since a large

corporation has better access to the outside capital market than a small one, the merger is said to be motivated by the possibility of borrowing more cheaply than separate units.

1.2.1.4.3. Diversification

The idea that diversification may be a motive to merge is related to the *modern portfolio theory*. This theory states that the market value of a firm can be increased if it incurs in optimal risk by investing in many uncorrelated instruments. This merger motive is different from the *spreading portfolio* motive that allows enhancing market power and that is based on the so-called *portfolio theory* exposed in 1.2.1.5.4. The common feature between them is that they occur in conglomerate mergers and acquisitions. Here, the idea is that managers assemble a portfolio composed of selected portfolios based on their overall risk-return performance rather than portfolios with securities that have individual high risk-return performance.⁶ This is a financial strategy that may reduce the risk of bankruptcy too. Sometimes diversification may be chosen with the purpose of higher managerial rents (see 1.2.2.4).

1.2.1.5. Enhancement or strengthen of market power

Market power is defined as the ability of a firm or group of firms to raise prices above the level that would prevail under competitive conditions. The ability to exclude competitors is also seen as a result of excessive market power. The scope of enhancement of market power is associated with industry concentration, product differentiation, entry barriers and cost advantages. The market power merger motive in horizontal mergers is the most controversial one. However, as exposed in the following paragraphs, market power is not exclusive to horizontal mergers.

1.2.1.5.1. Through unilateral effects

Unilateral effects arrive in horizontal mergers and are defined as the threat that the merged firm, acting independently of any remaining rivals (that is without colluding), finds profitable to raise its prices after the merger. The assessment of unilateral effects differs depending on the mode of competition assumed. For example, Farrell and Shapiro (1990), within a framework of competition in quantities, in which firms produce homogeneous goods and have equal constant marginal costs, find that the effect of a horizontal merger is an

⁶ Simpler than that: managers chose portfolios by comparing the stock relative performance with a general index in the market rather than by its stand alone performance.

increase in prices. Even though rivals typically increase output when the merging firms limit their production levels, horizontal mergers under quantity competition result in higher prices unless they generate economies of scale or synergies. The authors also show that the necessary economies of scale or synergies to lower prices are greater the larger the merging firms' market shares are and the more inelastic the market demand is. Some other oligopoly models like the one of Perry and Porter (1985) show that mergers between asymmetric (in distribution of capital) firms, whose driver is to create internal capital markets, also reduce the degree of competition, increase prices, and reduce therefore consumer surplus. In the context of price competition with differentiated products, the pioneer analysis of Deneckere and Davidson (1985) shows that mergers in these markets lead to price increases of all firms (merging and non-merging) unless strong synergies are a consequence of the merger. The main element driving the results of this model is precisely product differentiation. When products are differentiated they are not perfect substitutes and consumers may not easily switch to a non-perfect substitute product when facing a price increase. Then, merging firms producing substitute products will benefit from raising prices to some degree, because they will recapture some of the customers who switch in favor of what previously was a competing product. Besides merger efficiencies other factors that would deter the exercise of market power in these models are free entry and buyer power. The reason is that when entering a market is sufficiently easy a post-merger price increase would only be transitory since new firms will supply at these more attractive prices which will prevent the increase in prices. On the other side, strong buyers (downstream firms for instance) can constraint upstream market power by threatening to switch orders from one seller to another or by threatening to start upstream production itself. For an extensive discussion of unilateral effect models see Ivaldi et al. (2003b) and Motta (2004, pp. 243-265).

1.2.1.5.2. Through coordinated effects (or collusion)

Coordinated effects also arrive in horizontal mergers, they refer to the case when the merger changes the mode of competition to a more tacit or explicit collusive behavior that facilitates the increase in prices. Recent propositions of collusive behavior predict that there is a positive relationship between market concentration and the probability of collusion. The reason is that, the smaller the number of competitors, the easier is to detect deviations from collusion and also the smaller the profit from deviating. However, if firms are more asymmetric after the merger, reducing the number of firms in the market might not be enough to increase the scope for collusion. The reason is that higher firms' asymmetries make more

difficult to sustain collusion because it is harder to coordinate and to discipline one another from deviations. Another feature that facilitates collusion is the elimination of a maverick either by horizontal merger or by vertical integration. A maverick is often considered as a new entrant that is not interested in pursuing collusion and behaves competitively or as a small firm with high innovation and patents assets. The key issue with the maverick is that it is a firm that has substantial competitive advantages with respect to its rivals. Then, by acquiring the maverick the possibility of a more collusive pricing is raised. Other models of vertical mergers predict that when there is inter-brand competition (several manufacturers selling through retailers), vertical integration might relax competition between manufacturers and between retailers allowing them to set higher prices. That is, in markets with this structure vertical mergers might favor collusive agreements and deter entry. For an extensive discussion of models of collusion see Ivaldi et al. (2003a).

1.2.1.5.3. To raise entry barriers

Post-merger higher entry barriers may facilitate the enhancement of market power. For instance, collusion cannot be sustained in the absence of entry barriers and it is more difficult to sustain the lower the entry barriers because deviating from collusive equilibrium is less costly. As well, merger unilateral effects on prices are less likely to occur if barriers to entry are low since the merging firm faces the likelihood of tougher competition. Then, raising entry barriers is a mean to enhance market power. Such entry barriers may be attained by merging if for example the merger unifies two potentially competing technologies or facilitates tying strategies.

1.2.1.5.4. To spread portfolio

This motive is analyzed under the so-called *portfolio theory* of merger effects or simply *portfolio effects* by the European competition authority. According to Motta (2004), it concerns mergers between firms that produce goods in distinct product markets but that are somehow related or complementary, that is, it concerns conglomerate mergers. This portfolio theory states that a merged firm is able to gain market power because its buyers will prefer to be supplied of different inputs by the same firm rather than by different firms. It also states that the merger may acquire higher bargaining power towards its buyers and even force competitors to exit the market. The merging to spread portfolio motive also introduces efficiencies in its analysis. A demand efficiency occurs when buyers buy tied products and that are complements that are offered at lower prices by the merged firm than by independent

firms. A cost efficiency occurs because offering a full range of products is less costly than offering them separately and thus firms save in operation costs by merging.

1.2.1.5.5. To obtain multimarket contact

The hypothesis of the multimarket contact –defined as the meeting of firms in more than one market- applies to conglomerate mergers as well.⁷ For an extense review of this motive in mergers see Scott (2005). This hypothesis states that a merger between diversified sellers can create market power in the individual market in which sellers compete. That is, the market power of a seller in a particular market can be increased through its contacts in other markets. To illustrate this, think about firms A and B competing in market 1, and firms C and D competing in market 2. If firms A and C merge as well as B and D, I end up with two firms AC and BD that compete in both markets 1 and 2 and that have a multimarket contact. The multimarket contact model shows that the merger will facilitate the sustainability of collusive prices in both markets 1 and 2, which would have not been possible without the multimarket contact (facilitated by the merger).⁸ The model also states that if collusion already existed in market 1 but not in market 2, with the multimarket contact post-merger collusion is sustainable in both markets. The multimarket contact hypothesis also introduces potential demand and supply efficiencies in the analysis. On the cost side, it states that a conglomerate merger with multimarket contact may generate economies of scale and scope. On the demand side, efficiencies are based on the conjecture that buyers of multiple products may reduce transaction costs if they buy from sellers offering several product lines at the time. This last argument is similar to the demand efficiency considered in the spreading portfolio motive.

1.2.1.6. Preemptive and defensive

Fridolfsson and Stennek (2005) propose a merger rational that they call the preemptive (or defensive) motive. They develop a model that shows that if being an insider is better than being an outsider, firms will acquire to prevent the target being acquired by a competitor. The reason is that the merged firm will be a more efficient firm (provided cost efficiencies)

⁷ Although generally antitrust enforcement does consider cases of conglomerate mergers, Scott (2005) insists in that theory and evidence show that multimarket contacts are a source of market power. The author affirms finding evidence that supports the multimarket contact hypothesis because in his estimations profits for lines of business in concentrated industries are significantly higher when multimarket contacts are high. Further evidence of multimarket contacts allowing for collusion is found in Evans and Kessides (1994) who studied the airlines market and in Parker and Roller (1997) who studied the US mobile telephone market.

⁸ This result holds only when there are asymmetries in the market, that is, when the market shares of firm A and B (and of C and D) in market 1 differ between each other as well as their shares in market 2.

and will become a more difficult competitor. This will affect the outsider, so preventing being an outsider, firms preempt the merger by anticipating the takeover. Other motives in mergers have been interpreted as defensive in the economic literature. The most common of these is the elimination of a significant competitor (a maverick for instance). Such defensive mergers may be seeking for market power enhancement, or may simply be responding to tougher price competition originated from exogenous factors. Defensive mergers have also been proposed as a result of an endogenous market response to exogenous market shocks such as new technological opportunities that increase the potential for innovation.

1.2.1.7. Disciplinary takeovers

These takeovers are said to play an instrument for ensuring that managers' actions do not deviate too far from those that would maximize shareholders value. They are thus inspired on the *principal-agent* theory and proposed as discipline devices from owners (principals) to managers (agents). Motives that pursue managerial gains (exposed in 1.2.2) are also founded in this theory. Their difference is based on that the ones exposed here seek to increase the firm's value whereas those in 1.2.2 are managers' strategies seeking to increase their own wealth (at the expense of the firm's value).

1.2.1.7.1. Market for corporate control

The market for corporate control (market for targets) motive has been first proposed by Manne (1965). The hypothesis states that a firm is undervalued due to inefficient management and that any bidder can detect this, acquire that firm and replace the manager. Thus, such a market operates efficiently in eliminating managers who either pursue goals that do not go into the shareholders' interests, or are simply incompetent. If the bidder who obtains the target replaces the pre-merger manager with a better one, the target will increase its value (if the manager is worse though it will decrease its value). Some authors have argued that the mere threat of a market for corporate control may serve as a disciplining mechanism to the targets' managers.⁹

1.2.1.7.2. Free-cash flow

The excess of free-cash flows is often considered as a result of management inefficiency. Indeed, it has been stated that companies that hold high free-cash flows are frequent targets in hostile takeovers. On the acquirer side, managers believe in the superior

⁹ This hypothesis has been tested empirically in event studies. I will discuss this in section 1.3.1.

quality of their investment decisions, relative to those of the shareholders. They prefer to re-invest corporate earnings even when this is not in the interest of the latter. One way of doing so, is by acquiring a target with excess free-cash flow. Jensen (1986) affirms that one way to solve for this agency problem is imposing to acquiring managers to finance the acquisition by debt. Using debt would discipline the acquiring firm's manager by reducing his post-merger discretion in the use of the free-cash flow.

Among the above reviewed merger motives the ones that might alter welfare through changes in products' prices, quantities or innovation are: the efficiency and synergy gains, costs savings, market power, preemption and better management. The remaining one, financial costs savings does not, in principle, imply any effect on welfare. The following merger motives do not offer any prediction of effects on the product market and thus on welfare. Still, they are often an issue in empirical (financial) studies because they propose an alternative to understand the *merger paradox*, namely, mergers failing.

1.2.2. Managerial Gains

The following proposals of merger motives originate on the theory of the internal inefficiency of the firm, the so-called *X-inefficiency* first analyzed by Leibenstein (1966). This theory highlights that there is a difference between the efficient behavior of firms, as predicted by economic theory, and what it is observed in practice. The reason is that, in the real world, firms are complex organizations in which there is a separation between shareholders (ownership) and managers (control). In these organizations, the decisions that affect the overall level of efficiency of the firm are taken by managers who might have objectives other than firm's value maximization. This is in turn related to the *principal-agent* theory that emphasizes the conflicts between shareholders and managers whenever there is incomplete and asymmetric information between them (the manager is usually better informed about his plans). These conflicts arise since shareholders (principal) seek to maximize firm's value and managers (agents) seek to maximize their wage (or their ego). That is the reason why these merger drivers are also known as the *agency motive*. In the overall, these motives state that the manager is searching for gains at the expense of shareholders gains.

1.2.2.1. *Empire building*

Also called the managerial discretion motive, it states that managers' objective is to increase the size of the organization they want to lead. Their goal is to grow and the fastest way to do it is by acquiring. The reason might be that their compensation is directly related to the size of the company they manage. This hypothesis has first been formulated by Mueller (1969).

1.2.2.2. *Hubris*

This merger driver was first proposed by Roll (1986). The hypothesis states that managers incorrectly believe to be better able to manage other companies. That is, they are overconfident in their managerial abilities and end up overpaying for a target which makes the acquiring firm to lose. In fact, it has been argued that the hubris consequence (acquiring firm losing from the deal) is equivalent to the winner's curse in common value auctions, namely, bidders overpay for the auctioned item. Here, the highest bidder has the highest positive valuation error (reflecting his overconfidence) and wins the target. The result is that shareholders of the acquiring firm lose from the deal because the market reacts to the *mistake* of the acquiring firm's manager.

1.2.2.3. *Risk spreading or diversification*

Sometimes the overall investment strategy of the manager to construct an optimal portfolio includes mergers and acquisitions. According to the portfolio theory this is indeed a mean, to diversify risk (by spreading a selected portfolio) and to maximize expected returns. However, sometimes the manager seeks for a personal portfolio rather than an optimal portfolio for the firm. Since he has the power to select the portfolio, personal diversification might be his goal.

As mentioned above, competition authorities generally consider overall economic welfare as consumer surplus rather than total surplus and therefore not all the above merger drivers are necessarily relevant for them. For purposes of merger enforcement, the issue that matters is the effect on welfare and not whether the transaction will generate gains to the firm or to the manager of the firm. For instance, mergers (of either conglomerate, vertical or horizontal type) motivated by managerial gains are not worth analyzed by antitrust authorities as they only involve a redistribution of gains among shareholders and managers. Nor are mergers driven by hubris, here, the effects are a transfer of wealth from acquirers to targets.

Neither are mergers driven by the empire building motive which effect is a transfer of wealth from shareholders to managers. The same reasoning applies for financial costs reducing mergers, that is, they do not necessarily affect the product market where the merger takes place and thus welfare.

In fact, competition authorities do concentrate the assessment of merger effects on the scope of enhanced market power resulted from a horizontal or vertical (to a less extend) merger.¹⁰ The reason is that from all these hypotheses of merger motives only the market power one (through the unilateral or coordinated effects) offers a clear potential effect on consumer surplus. Indeed, the predictions of these models have served as a base to competition authorities in designing merger policy. For example, the European Horizontal Merger Guidelines (HMG) stipulate that, if coordinated effects are the concern, factors that facilitate post merger collusion are to be taken into account in the assessment of the merger. These factors among others include: market concentration, entry barriers, multimarket contacts, regularity of market interactions, transparency of the market (information exchange), and capacity constraints. On the other side, if unilateral effects are the concern, the analysis requires a quantitative projection of the (short-term) price change as a result of the merger. Moreover, merger-specific efficiencies are to be taken into account to make a trade-off between the efficiency gains and the higher market power. That is, it is necessary to predict whether efficiency gains will outweigh the negative impact of the increased market power. This is difficult but feasible by making use of the simulation technique described in 3.2. Indeed, antitrust enforcement has introduced the role of merger synergies to clear a merger that might be otherwise considered anticompetitive. The US merger regulation has included the efficiency defence in merger analysis since 1997 and the EC merger regulation has introduced in its 2004 reform. They recognize, as oligopoly theory predicts, that efficiencies generated through merger can enhance the merged firms' ability and incentive to compete, which may result in lower prices, improved quality and innovation (new products). Both such legislations impose however some conditions to accept the efficiency defence clause in mergers: efficiencies must be merger-specific, verifiable, and must be sufficiently large to prevent the merger from being anticompetitive. Then, necessarily the following questions emerge: what efficiencies are merger-specific? How to verify them? How to know if they will overwhelm enhanced market power?

¹⁰Vertical mergers are generally considered as welfare enhancing. The reason is that economic theory suggest that by vertical integration, the upstream and the downstream firm will avoid double marginalization and will then save costs. However, as it has been exposed in 2.1.1.3, vertical integration may have adverse effects on welfare because it may result either in foreclosure or on easier conditions to sustain collusion.

As discussed above, Farrell and Shapiro (2001) explore which efficiencies should qualify as being merger specific. They proposed to distinguish between efficiencies that could be achieved by other means than a merger from those that can only be achieved through this particular form of corporate reorganization. The authors refer to technical efficiencies as those gains that could be obtained otherwise; and synergies as efficiencies that can only be achieved by merging, i.e., that are merger-specific. It is well known however that including the efficiency defence in case studies is not an easy task because it is costly and lengthy. Furthermore, the requirement of the merger guidelines that efficiencies arising from a merger need to be verifiable is often interpreted as *quantifiable*. Roller, Stennek and Verboven (2006) as well as Motis, Neven and Seabright (2006),¹¹ recommend to leave in the responsibility of the firms that claim searching for efficiencies and merger-specific gains, the burden of such a proof. The former group of authors proposes also a checklist of relevant dimensions that should be considered when assessing the role of efficiencies in mergers. For example, the authors emphasize that efficiencies in the form of cost savings that involve social efficiencies and not only redistributive gains are the ones to be included in a welfare analysis. Then, only rationalization (1.2.1.3.1) should be considered as a social gain, while all the rest in the category of cost savings should not (since they only involve a transfer of wealth). Cost savings involving the elimination of duplicated fixed costs should not be considered either because they do not imply an effect on product prices. Further recommendations are to focus uniquely on the relevant market rather than on other markets where multiproduct merging firms may operate, and to regard at firm level of efficiencies and not at the industry level efficiencies. Finally, another important issue to have in mind is that even if merging firms reach efficiencies post merger, this does not necessarily mean that such efficiencies will benefit consumers with lower market prices. According to Roller, Stennek and Verboven (2006), for efficiencies to ensure price reductions after mergers it must be that they are driven by long-run economies of scale involving the flexibility of physical capital, product-specific economies of scale and synergies materialized in technological progress, in turn achieved by transfers of know-how or by increased incentives in R&D.

All the previous arguments are supported by the theories of industrial organization or corporate governance, a natural following question would be: what have the literature of industrial economics and/or finance done to investigate for merger motives, merger gains and

¹¹ Both studies are documented in *Efficiencies in Merger Control* (2006).

merger effects? There are many empirical studies that have investigated these features. I will summarize their methodology and general results in the following subsections.

1.3. Empirical Evidence: Merger Gains, Motives and Effects

To our knowledge, empirical studies have not, until now, tested for all the above mentioned hypotheses of merger motives. The main reason is the difficulty to disentangle the motive from the observation of the merging (and non-merging) firms' gains. The empirical methodologies employed in the assessment of merger gains, motives and effects I expose in this section perform either a *reduced-form* analysis or, a *structural-form* analysis. The empirical *reduced-form* analysis establishes an indirect, incomplete or informal relationship between the observed data and the economic model. For example, *event-studies* and *accounting-studies* “guess” the economic model from the estimated gains. To this category also belongs the previously largely employed *SCP (structure conduct performance)* technique that due statistical its pitfalls and weak relation with new industrial organization models ceased being reliable in contemporary merger empirical analysis.¹² Studies employing the reduced-form methodology analyze several mergers and acquisitions occurring in different periods and industries at the time, that is, their analysis is in a *group-of-mergers* basis. In contrast, the empirical *structural-form* technique drives the analysis through and economic model which in turn serves to interpret the estimated data. Studies employing this methodology do so in a *case-by-case*, their objective is to predict the merger effects as responses to changes of relevant factors in the specific industry the merger is taking place (for example, the change of number of firms in the industry and/or the potential merger-specific gains). In what follows I briefly summarize these different empirical methodologies and their overall evidence.

¹² This methodology is based on the idea that market structure (i.e., number of competitors) determines market conduct (i.e., competition or collusion) and hence generates market performance (productivity or profitability). Its strongest pitfall is the statement of a systematic causality of concentration on market power. That is, the SCP hypothesis predicts that market prices would be higher the greater the level of concentration. Since nowadays it is well acknowledged that in the context of product differentiation, an industry with just two competitors can be highly competitive, and that even a market with a monopolist can achieve the competitive equilibrium if the market is open to new entrants because costless entry would keep prices low (these reflections are based on theories of unilateral effects). The second critic is related to methodological problems. For example (to cite the perhaps most important statistical pitfall of the technique) the fact that in reality performance has an effect on structure (and not only structure on performance) implies a serious endogeneity problem on the SCP regression.

1.3.1. Event studies

Event studies rely on the assumption that stock prices reflect the present value of the expected gains created by the merging firms. Assumption sustained in turn by the efficiency of the stock markets. By computing changes in the stock prices of the merging firms with respect to a market portfolio or an industry index, that is, by estimating the market model or the CAPM, they investigate whether the announcement of the merger causes the stock returns of the bidder and target to perform differently. The merger gains are said to be the return that is observed in excess of what it would have been if no merger announcement had been made.¹³ Most of these event studies find that while acquired firms gain from the deal, acquirers at best do not lose. Joint gains are found mostly positive but not always significant.¹⁴ In trying to identify the motive to merger, Mueller and Sirower (1998) use the distribution of the merging firms' abnormal returns and test for: the market for corporate control, synergy, managerial discretion and hubris motives in mergers. They interpret the substantial losses of bidders, at the time the acquisition is announced, as evidence supporting the managerial discretion and hubris rationales and to a less extent to the market for corporate control (since these hypotheses predict decreases in the value of the acquiring firm). Some of these studies test for the market power and the efficiency hypotheses of merger by comparing targets' and bidders' gains as well as those of their rivals.¹⁵ If insiders and outsiders register positive gains, market power is said to be the effect of the merger, if only insiders register positive gains while outsiders lose, then efficiency is said to be the effect of the merger. On the other hand, if merging firms obtain negative abnormal returns while outsiders gain, event studies evoke the managerial hypotheses of empire-building or hubris. Finally, when all players register negative abnormal returns, event studies fall back on the theory of preemptive mergers. However, this technique faces some pitfalls in inferring merger gains. The most important of them is that event studies are not able to disentangle any gains originated from increased market power or from efficiencies since simply because there is not an underlying

¹³ More specifically, the market model, $R_{it} = \alpha_i + \beta_{mi} R_{mt} + e_{it}$, is first calculated for a period prior to the merger announcement called the "estimation window", where R_{it} are the actual returns to firm i at time t , R_{mt} are the actual returns to a market portfolio for firm i at time t . Second, a period after announcement called the "event window" is selected to compute the abnormal returns. These last are obtained by subtracting the predicted return to the actual return, that is, by computing: $AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_{mi} R_{mt})$. Finally, merger gains are obtained by summing up the abnormal returns over the length of the event window; they are called the cumulative abnormal returns.

¹⁴ For reviews of event studies see Jensen and Ruback (1983), Tichy (2002), Andrade, Mitchell and Stafford (2001), Bradley, Desai and Kim (1988).

¹⁵ See Stillman (1983), Eckbo (1983), Banerjee and Eckard (1998).

structural model from which one could identify the parameters of the reduced form employed to infer about merger gains. Moreover, determining if the merging firms generate any gains by computing outsiders' reaction to the merger is incomplete. The reason is that only insiders have sufficient information about the generation of new value for the merged entity and this is not necessarily revealed at the merger announcement date. This might be why event studies generally conclude that merging is not a profitable activity for the acquiring firm.

1.3.2. Accounting studies

These studies analyze merger performance by measuring and comparing the accounting profits of the merging parties before and after their integration with those of a control group. These studies are less homogeneous between them than event studies because different measures of profitability are adopted, for example cash flows, gross profits, profits net of interest and taxes, profit ratios (returns on equity, on total assets, or on sales). Different alternatives are also used to control for external shocks, i.e., comparing the merging firms with their base industry or with matching firms (firms similar to the merged ones in industry and size). The variation in the employment of this methodology seems higher than the variance of general results. Indeed, the findings of these studies do not differ very much from those of event studies. In most cases post-merger profits of the merging firms are weaker than the ones of the merging-control group.¹⁶ With this methodology, the hypotheses of market power and efficiency have been tested as well. For instance, Gugler et al. (2003) use profitability and sales as their measure of performance. They conjecture that if profits and sales increase, efficiency was the driver of the merger, while if profits increase and sales decrease market power was the driver of the merger. They split their sample in large and small firms. For large firms they find that, five years after the acquisition, 43 percent of merged firms reveal a merger fail (a loss in profit). Efficiency is found to be the motive in 29 percent of the sample and market power in 28 percent of the sample. For the small firms sample they found that 35 percent of the firms revealed the efficiency motive and 20 percent the market power motive.

The two previous approaches measure the performance of the merging firms relative to a benchmark of expected performance and relative to their close neighbors and competitors. They employ large datasets in the form of cross-section or panel (cross section

¹⁶ See Ravenscraft and Scherer (1987), Healy, Palepu and Ruback (1992), Mueller (1980a and 1980b) among others.

with time series) datasets. This data is relatively easy to collect since it is generally available in public databases (in universities or research centers), DataStream would be an example.¹⁷ However, given that they rely on a reduced form analysis two main drawbacks are encountered. The first one has to be with economic theory because the question remains in identifying the relationships within insiders' returns and between outsiders'/ insiders' returns. The second one is more a statistical issue and has to be with the identification of such gains.

1.3.3. Case-by-case studies with/out simulation

These studies are based on oligopoly models of competition and employed structural econometrics to predict the result of the merger on prices. To our knowledge these studies are mostly performed for horizontal merger cases and to a much less extend to either vertical or conglomerate mergers. This might be because it is generally thought that vertical and conglomerate mergers are much less likely to harm competition or simply because they are much more data demanding.¹⁸ These studies look at the effect of the merger on prices since they rely on unilateral effects models and take gains as granted (see section 1.2.1.5). This is because in unilateral effects models an increase in price is equivalent to an increase in profit. Thus, the actual question here is not if mergers gain, but instead, how large the price increase will be. This serves to determine if such a merger will enhance or increase significant market power. The general procedure is briefly described as follows. In a first step, structural econometric tools are employed to estimate the supply and demand side of the merger and therefore obtain the pre merger equilibrium prices. In a second step, simulation is employed to predict the post merger equilibrium prices taking into account potential efficiencies (modeled as decreases in constant marginal costs of the new merging entity). In the third and final step, pre and post merger prices are compared and the corresponding perceptual change obtained. The common feature of these case studies is the assumed mode of competition. It is generally modeled as Bertrand competition, that is, in a differentiated products market context where firms choose their prices to maximize their own profit assuming that their competitors are acting in similar way.¹⁹ Most of the variation in these competition models relies on the

¹⁷ By "easy" I mean at no additional monetary cost, of course it demands considerable time and effort.

¹⁸ However recent theories of foreclosure predict that vertical mergers can either eliminate horizontal competition or allow a monopolist to preserve its market power against downstream buyers. Indeed, under certain circumstances a vertically integrated firm is more able to exploit market power that if it were vertically separated. Some empirical studies have started to include the vertical aspect in horizontal mergers, see for example Bonnet, Dubois and Simioni (2006). Conglomerate mergers motivated by the purchasing power or by the spread of portfolio drivers may also facilitate the exercise of market power.

¹⁹ If coordinates effects is carrying out in the analysis, firms are assumed to set their prices by maximizing their joint (along with their rivals) profit.

demand side specification, which in turn, plays a crucial role on the effects in prices. For instance Crooke et al. (1999) have shown that the predicted price increase is greatest if demand is of the constant elasticity form (log-linear), followed by the AIDS form, followed in turn by the logit demand and lastly by the linear demand.²⁰ The difference relies of course in the curvature of each demand system. This methodology requires data about product prices, market shares, size of the market and product characteristics to finally obtain the key determinants of the exercise of market power, namely, own and cross price elasticities.²¹ Unfortunately, the first difficulty encountered when analyzing horizontal mergers in case studies is the availability of data. The second is the high econometric skills demanded (less serious since good econometricians are not rare) as well as time. A third difficulty has to do with more theoretical issues. For instance these studies are based on static models of price competition only²² and lack dynamic aspects of the merger. Such dynamic aspects could be efficiencies and long term effects such as an increase in product variety, investment and innovation may leave prices unaffected or even lessen them, but they are also difficult to introduce in the analysis. Since Pakes and McGuire (1994), considerable advances have been attained to introduce dynamics aspects in econometric models, but there is still a lack to general cases.

1.4. Conclusions

In this chapter I summarize a broad list of different rationales that have been proposed as merger motives. I classified them in two main groups. The key distinction between these two groups of merger motives is the effective claimant of the (seeking) merger gains. The first group includes drivers that increase the value of the merging firms since their effect is an increase on the actual or future economic profits. The second group includes a list of rationales that go into the interest of the manager of the firm and not in the firm's value. That is, in these mergers the driver is to increase the acquiring firm manager's wealth even if this

²⁰ The reason is that with the log-linear demand system own and cross elasticities remain the same post-merger so the firms can increase prices without missing customers. Whereas the linear system exhibits the highest own price elasticity and therefore the least scope to increment prices. However this demand is not very appealing because sometimes it can obtain negative values.

²¹ In Bertrand competition, the mark-ups firms will set, are inversely related to own and cross price elasticities. In contrast, unlike the situation with differentiated products, merger simulation in a Cournot industry with homogenous goods requires the specification of industry boundaries, a single and a rough estimate of the industry's elasticity of demand supplies market delineation. That is, only the aggregate demand elasticity of the industry is needed.

²² Other dimensions of competition would be advertising, promotion, place (location).

may cause a decrease in the firm's value. Our classification of merger motives is proposed to emphasize that for the assessment of merger enforcement, the issue that matters is the effect on welfare and not whether the transaction will generate gains to the firm or to the manager of the firm.

We also review three different empirical methods that have been proposed in the literature to investigate for merger motives, gains, and effects. These are the *event-studies*, the *accounting-studies* and the *case-by-case* studies. From the review of their general findings I conclude the first two empirical methods, lack a structural analysis of the merger mechanism and do not offer, by consequence, a proper assessment for inferring merger gains. Moreover, the general conclusions these studies draw are that acquiring firms in mergers do not significantly gain from the deal. These somewhat paradoxical conclusions may come into place because these techniques carry out the analysis with reduced forms that incur into misspecification problems. On the other side, empirical case-by-case studies offer a very appealing accuracy in evaluating merger unilateral effects because they are able to estimate structural models of competition and predict the potential market power enhancement due to the merger. However, they are much more data, ability and time demanding than reduced-form empirical studies.

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