

Chapter 8

MERGERS, ACQUISITIONS, AND TAKEOVERS:

WEALTH EFFECTS ON VARIOUS ECONOMIC AGENTS

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I. INTRODUCTION

The problem of tracing causes and effects of mergers and acquisitions is difficult for two reasons. First, it is necessary to frame the discussion of these events in an appropriate model of the firm that can capture enough of their richness without the burden of undue complexity. The neoclassical firm of microeconomic textbooks that is assumed to be run by an entrepreneur-manager does not provide an adequate setting to capture the richness of the mergers and acquisitions in the modern corporate scene. Given the context of that model, it is not surprising that much of the discussion of mergers and acquisitions in economic literature is focused on their effects on the owners of the firm.

Second, it is necessary to anchor the discussion of the causes and effects of mergers and acquisitions in some equilibrium concept in order to impart at least a minimal degree of coherence to it. In the absence of a reasonably well defined

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idea of the equilibrium state of the system, there is no consistent basis for making comparative statements. Most models of economic equilibrium are static while mergers and acquisitions are dynamic events unlikely to be explainable in terms of static models alone. We discuss each of these problems in turn.

II. CONTRACT MODEL OF THE FIRM

When two firms merge together, or when one is taken over by another, rights and obligations of the economic agents involved in both firms are affected in a nontrivial manner. While much attention has been paid to the effect of such events on wealth of the shareholders, relatively little has been said about their effect on the complete resource equation of the firm and on the welfare of the other classes of agents who participate in the firm. It is the purpose of this paper to examine the relevant theory and the available evidence on the economic consequences of mergers and acquisitions on various agents who participate in these firms.

Starting with Barnard (1936), Coase (1937), Simon (1952–1953), and Cyert and March (1963) through the work of Alchian and Demsetz (1972), Fama and Jensen (1980), and Sunder (1983), a firm has been thought of as a set of contracts among the suppliers of various factors of production. In a typical manufacturing firm, for example, these factors might include equity and debt capital (supplied by the shareholders and bondholders), managerial and technical skills (supplied by the professionals), labor and clerical skills (supplied by the employees), machinery, equipment and materials (supplied by the vendors), police protection, court adjudication and other public services (provided by the government) and cash (provided by the customers). These resource contributions from various economic agents are utilized by the firm to produce other resources that, in turn, are used to reward the agents who supply the factors of production.

Profitability of the firm can be evaluated from the point of view of each participating agent. Because the division of surplus varies across agents, participation of some agents in a firm is more profitable than the participation of others in the same firm. From the point of view of each agent, profitability of a firm can be defined as the excess of what they get over what they contribute to the firm. Agents participate in the firm only if each of them expects to receive at least as much as the opportunity cost of what he or she contributes to it. The amount each agent receives in excess of the minimum acceptable amount is that agent's share of the rent or surplus.

All organizations must generate surpluses to remain viable. Those that do not generate any surplus cannot persist in equilibrium because agents will abandon the firm for more profitable employment of the resources they can supply. How this surplus is distributed among the participating agents in equilibrium is the key question.

III. EQUILIBRIUM CONTRACT SETS

The events of interest in this paper, mergers and acquisitions, represent transition of the world from one state to another. The problem with static models of equilibrium is that they describe the conditions under which each state of the world would be observed in static equilibrium. Changes in these conditions bring about transition of the world from one state to another. These changes are, by definition, exogenous to static models and cannot be shown to have arisen due to economic factors within the context of such models. For example, if the existence of an overfunded pension plan is postulated as a variable to explain the acquisition of the firm, we implicitly have to rule out of our economic environment those factors that give rise to the overfunded pension plan in the first place. The argument proceeds as if the management or shareholders of the firm themselves are incapable of taking any action that will give them the benefits of terminating an overfunded plan. For some unspecified reason, intervention by an outside party is assumed to be necessary to terminate the plan. Such logic does not fit well with the deductive structure of analytical economics.

In a dynamic model, of course, the factors that bring about changes in the state of the world would, themselves, become a part of the formal model. Such a formal model is difficult to construct and we know of none which has so far been proposed to explain the mergers and acquisition phenomenon.

In the absence of dynamic models, attempts to explain the complex unfolding events of a merger or acquisition become a hodgepodge matrix of equilibrium and disequilibrium statements. The scope of the static neoclassical model of the firm is too limited for the purpose of analyzing mergers and acquisitions. Publicly held firms are complex contract sets that intimately tie together the interests of many different classes of economic agents who supply various factors of production to the firm and receive various resources in exchange. Mergers and acquisitions typically rearrange these contracts in significant ways. The direct and indirect consequences of such rearrangements affect most classes of agents in varying degrees and hardly any remain entirely untouched. Yet, there is a tendency in the merger and acquisition literature to assume that somehow the holders of securities (i.e., equity and debt holders) are the only ones that are affected in any significant fashion and that the effects of these events on the other classes of agents are minor or nonexistent and can therefore be ignored.

We argue in this paper that this assumption is incorrect and yields misleading results. Security holders are not generally the only or even the major parties affected by mergers and acquisitions in a significant fashion. The wealth redistribution effects of these events on various parties are both direct (due to change in contracts, compensation, prices, and terminations) as well as indirect (due to change in the demand and supply in the appropriate factor markets, and the competitive conditions in various markets).

Agents who contribute those factors of production whose supply is highly elastic fail to garner a significant share of the surplus in a competitive market. As the supply becomes inelastic, a larger share of the surplus will accrue to the suppliers of that factor. Thus the distribution of the surplus among the agents is a function of the demand and supply conditions in various factor markets.¹

An interesting question about mergers and acquisitions is their effect on the distribution of surplus among the contracting agents. Mergers and acquisitions represent a significant rearrangement of the contract set of the firm affecting the interests of just about all the participating agents. The stake of each agent in the firm may increase or decrease after the merger/acquisition. This effect on the wealth of each agent can be decomposed into two components. A wealth effect could arise from the change, increase or decrease, in the size of the corporate pie of resources. The production technology of the firm may simply be more efficient after the merger and thus enable the firm to arrive at a Pareto superior solution such that each agent either gains or is unaffected but nobody is hurt. A second source of wealth effects is the transfer among the agents. Relative to a constant size of the pie of corporate resources, the merger or acquisition may rearrange the contracts in such a way that some agents do acquire a larger share of the pie at the expense of the share of the other agents. We shall examine both the size and the share (of the pie) issues and discuss the possible sources of and the available evidence on the size as well as the distribution of the corporate resource pie.

IV. SIZE OF THE CORPORATE RESOURCE PIE

What are the possible reasons for the changes in the size of the resource pie? A frequently cited but rarely documented reason is that a merger may allow the firm to produce its goods and services more or less efficiently than the component firms could do before the merger. On the positive side there could be economies of scale. There could be economies of technology; the merged firm could produce two widgets out of the resources it took to produce one before the merger. On the negative side, there are costs of adjustment. Assets, employees and so forth may have to be released, rearranged, transferred or retrained. New procedures may have to be implemented and a new organization designed after the merger. Managers, too, may also have to be retrained. The cost of reorganizing the companies can be nontrivial. After acquiring Republic Airlines, Northwest discovered that the Republic wages were much lower and they had to raise them to the level of the corresponding Northwest employees. Aside from the transfer aspect of this merger, the production of airline service became more costly after this merger than it was before.

With respect to efficiencies in production technology, Bain (1968, p. 381) states:

the cases of clear economies of integration generally involve a physical or technical integration of the process in a single plant. A classic case is that of integrating iron-making and steel-making to effect a saving in fuel costs by eliminating a reheating of iron before it is fed to a steel furnace. Where integration does not have this physical or technical aspect—as it does not, for example, in integrating the production of assorted components with assembly of those components—the case for cost savings from integration is generally much less clear.

Williamson (1987) suggests that mergers are sometimes supported by a broader efficiency rationale. He argues that the key feature of economic organization—in intermediate product markets, labor markets, capital markets, regulation, and so forth—is the transaction cost optimization. Consistently, he argues that one of the motives for takeovers is the reduction in transaction costs. For example, he states that inventory management is a special concern for branded goods that can go stale. He suggests that producers of cigarettes, candy, meat, and so forth, may be motivated to integrate into the wholesaling of their product by the desire to eliminate direct and, more importantly, indirect costs of contracting with independent wholesalers.

As mentioned earlier, there is not much direct evidence on individual sources of efficiency—economies of scale, vertical integration, adoption of more efficient production or organizational technology, managerial efficiency, and reduction of agency costs. However, there are a large number of studies that deal with the aggregate effects. These studies fall into two categories: those measuring effects on corporate returns and those testing their effect on shareholder returns on equity. Most of the earlier studies were of the first category and focused mainly on pre- and post-merger returns of the merged entities. The main result of these studies is that mergers typically had no or a negative effect on company profitability (Hogarty, 1970). However, these studies do not examine the possibility that profits may have been lower (e.g., even more negative) if the mergers had not occurred. In more recent studies, attention has been extended to comparison between acquiring and acquired firms and between acquiring firms and a control sample. The results of these studies (Boyle, 1970; Weston and Mansinghka, 1970; Melicher and Rush, 1973) are inconsistent with the hypothesis that the acquiring firms were generally superior performers and thus likely to be purchasing other firms to enhance efficiency.

In the last decade, empirical studies of merger effects have focused on returns on shareholder equity (see Jensen and Ruback [1983] and Weidenbaum and Vogt [1987] for summaries). Scientific evidence on the effects of takeovers shows positive gains to target company shareholders. However, the studies point out that there are systematic reductions in the stock price of bidding firms following the event. The evidence shows significant positive abnormal returns to the shareholders of the target firms. Whether, or how much of, this gain is attributable to increased efficiency in operations of the target firms and how much is due to wealth transfers from other agents is unknown.

An increase in the total resource pie of the firm can result from an increase in its market power. It is frequently argued that one of the major reasons for a firm to engage in merger activity is the desire to increase its market power in product markets. It is postulated that a firm can increase its product prices as it moves from the competitive setting to the monopoly level as the number of sellers falls or as the product market becomes more concentrated. Thus, mergers are believed to enhance the ability to earn monopoly rents through increased concentration. However, as Jarrell (1987) points out, the relationship between market concentration and the ability to earn monopoly rent is weakened when other economic considerations are taken into account. For example, if the market demand is highly elastic or if there are no barriers to entry and there are good substitutes for the firm's production techniques, then even large increases in market concentration will not result in material monopoly rents.

Two recent studies (Stillman, 1983; Eckbo, 1983) have empirically examined the market power hypothesis. This hypothesis implies that mergers result in increased product prices, and, therefore, benefit not only the merging firms but other competing firms in the industry as well. Increased market concentration resulting from merger activity leads to higher prices which allow competing firms to increase their own product prices. This suggests that a merger offer announcement should be accompanied by an increase in the equity values of competing firms as well as the merging firms.

Stillman (1983) identified a sample of 11 horizontal mergers in unregulated industries which were challenged under Section 7 of the Clayton Act, whose rivals were identified in the proceedings, and for which necessary data for analysis were available. He examined the abnormal returns for rival firms in these 11 mergers and, in all but two cases, did not find statistically significant abnormal returns for rival firms in a merger. Of the remaining two cases, only one is unambiguously consistent with the hypothesized increase in the equity values of rival firms. Thus, the evidence in this study does not lend support to the hypothesis that mergers result in gains due to increased market power.

Eckbo (1983) examined the abnormal returns of rivals for 126 unchallenged and challenged mergers. Tests of stock price reaction of rivals were conducted at the first public announcement of the merger as well as at the announcement of the antitrust challenge. Results of these tests around the date of the announcement are consistent with the market power hypothesis. Rivals of both challenged and unchallenged firms experienced positive abnormal returns although the results were statistically insignificant in the unchallenged case. However, the market power hypothesis predicts that rival firms will realize negative abnormal returns at the time of the announcement of the antitrust challenge because of reduction in the probability of completion of the merger. Eckbo (1983) found there was no statistically significant abnormal stock price reaction around the date of the announcement of the challenge. These results of Eckbo are inconsistent with the market power hypothesis.

Thus, the theoretical development of the market power hypothesis fails to consider all the relevant variables such as the elasticity of demand and barriers to entry. Empirical evidence, in general, appears to be inconsistent with this hypothesis. In summary, the evidence regarding the effects of mergers on total corporate resource pies is ambiguous.

V. DISTRIBUTION OF RESOURCES AMONG ECONOMIC AGENTS

Let us now look at the wealth transfer or share-of-the-pie aspects of mergers and acquisitions from the point of view of each major class of agents.

A. Shareholders

The acquiring firm may issue new shares of stock and thus dilute the equity of its existing shareholders. The firm may be recapitalized and the shares in the old firms may be exchanged for the shares of the new firm. More than one type of shares with a new definition of voting rights may be issued. Management of the firm may pay greenmail to a threatening shareholder and buy back stock at prices not available to the other shareholders. Finally, the shareholders may be bought out under less than normal conditions or under pressure or implicit threat.

Shareholders of the acquiring and the acquired firms are not in a symmetrical position in these transactions unless they are designed as mergers. Depending on the incentives and the negotiating skills of the managers and directors of each firm in a merger, the shareholders of the two firms may end up in a more or in a less advantageous position.

Weidenbaum and Vogt (1987) survey ten studies of returns to the shareholders of target firms and find that "every study reports significantly positive [11 to 34%] returns." Shareholders of the acquiring firms are not so fortunate. From their survey of eleven empirical studies they conclude that the shareholders of the acquiring firms end up being losers in the game on average.

Incentive aspects of managers are particularly important here because they negotiate these transactions even though they may not have a sufficient equity stake in the firm to align their personal interests with those of the shareholders. Indeed, Lewellen, Lederer and Rosenfeld (1985) found in a study of 191 acquiring firms during the period 1963–1981 that there is a positive relationship between the abnormal stock returns from mergers and the percentage of the acquiring firm's shares held by the management. Higher stock ownership by the managers aligns their personal interests with those of the shareholders.

Two quite different explanations are available for the negative average returns to the shareholders of the acquiring firms. Weidenbaum and Vogt (1987) suggest that the agency problem between the shareholders and the managers of many ac-

quiring firms is not satisfactorily resolved because sufficient controls are not imposed on the behavior of managers. Managers exploit this weakness of control to their advantage by engaging in acquisitions so they can get bigger compensation for managing larger firms. Roll (1986) offers the hubris hypothesis that explains the gains to the target firms and losses to the acquiring firms by positing that the valuation of the target firms by the acquiring firms is subject to error and that the offers in which there is a large positive error are more likely to lead to completed mergers and acquisitions. Both these explanations imply the absence of static equilibrium in managerial behavior or in managerial controls.

B. Creditors

Rights of the creditors of the firm also may be affected in a nontrivial way by a merger or acquisition. The firm might sell off its assets and reduce the margin of security for the creditors. It might take on additional debt, thus increasing the risk of bankruptcy and default for the unsecured creditors. On the other hand, a larger firm may provide a better safety cushion for the creditors and thus transfer wealth to them.

All creditors are not in a symmetrical position. There could be transfers of wealth among various classes of creditors as a result of rearrangement of debt of the firm.

C. Employees

Wealth effects of mergers and acquisitions on nonmanagerial employees of the firms can be both direct as well as indirect. Employees may lose their jobs, be forced to accept transfer within the firm or accept lower pay within or outside the firm. In all such cases, there is considerable uncertainty, anxiety, and costs of adjustment employees have to bear. Employees may have developed firm or location specific skills that may have little value once they leave the job. In some cases these factors may work in the favor of employees. When Northwest Airlines acquired Republic Airlines, employees of Republic Airlines had windfall gains when their pay scales were raised to higher levels to match those of the Northwest employees in similar jobs.

The second component of the employee wealth effects is due to the shift in the demand for their skills and services and due to changes in their bargaining power relative to the employers. Employees with skills that are not easily transportable may be big losers. If a merger results in higher concentration of potential employers of pilots, it may no longer be possible for the employees to negotiate with the same bargaining power as before. A merged firm may choose a different technology and a different combination of labor and capital for production. This shifts the demand for the services of employees and, therefore, has an effect on their wealth.

Table 1. Recapture of Pension Surpluses
 Plans with surpluses in excess of \$1 million
 (Dollar figures for January 1980 through June 1985, in millions)

| <i>Year</i> | <i>Plans</i> | <i>Participants*</i> | <i>Assets</i> (<i>\$</i>) | <i>Benefits</i> (<i>\$</i>) | <i>Recaptured</i> (<i>\$</i>) |
|--------------------|--------------|----------------------|--------------------------------|----------------------------------|------------------------------------|
| 1980 | 9 | 22 | 58.5 | 40.1 | 18.4 |
| 1981 | 35 | 31 | 341.0 | 182.0 | 159.0 |
| 1982 | 82 | 124 | 1,136.0 | 731.0 | 405.0 |
| 1983 | 155 | 163 | 3,350.0 | 1,786.0 | 1,564.0 |
| 1984 | 236 | 285 | 5,575.0 | 2,821.0 | 2,754.0 |
| 1985 | 19 | 13 | 185.0 | 108.0 | 77.0 |
| Subtotal | 536 | 637 | 10,645.5 | 5,668.1 | 4,997.4 |
| Pending 6/30/85 | 216 | 271 | 6,281.4 | 3,539.3 | 2,742.1 |
| Total | 752 | 909 | 16,926.9 | 9,207.4 | 7,719.5 |

Note: *In thousands.

Source: Pension Benefit Guaranty Corp.

Employees also lose their unvested pension benefits at the time of termination. Under the normal course of employment and operation of the original firms, a large part of these benefits would have been expected to be vested in the employees with time. This reduction in the expected wealth of the employees represents a transfer from employees to other agents in the firm.

The popular press has frequently asserted that the overfunded status of pension plans is playing an important role in the takeover activity as companies have begun to realize that overfunding can constitute a hidden asset for these companies. Due to the healthy stock and bond markets the value of many corporate pension funds has risen considerably. At the same time inflation is down, lowering projected wage increases and estimated benefits payments in years ahead. These two factors along with more optimistic assumptions about future returns on pension fund investments have resulted in many corporate pension plans being vastly overfunded. As indicated in Table 1, surplus assets in pension plans can be of substantial value.

According to a recent report by Oppenheimer and Co., a securities firm, companies comprising the Standard & Poor's 400 industrials alone had a total of about \$34 billion of excess funds in their pension plans. Sixteen of those firms had excess assets equal to more than 20% of the market value of their own equity. Union Carbide, for example, had about \$1 billion in surplus pension assets, which was approximately one-third of the market value of its stock. Thus, there is no question that surplus assets in the pension plans of many corporations are substantial. It is argued that overfunded pension plans represent a potential cash windfall for companies or for those looking for takeover candidates. For exam-

ple, a corporation can recapture surplus pension assets by terminating a defined benefit plan and establishing a defined contribution plan or buying annuities for employees. When a company terminates its pension plan, it must cover its current obligations to employees, which is typically done through buying annuities. The excess funds are available to the company for other purposes. Afterwards, companies are not required to start a new pension plan although most of them do. However, most of them elect defined contribution plans which offer present contributions by the company rather than defined retirement benefits. This way the companies shift the investment risk associated with retirement benefits to the employees.

The press has advocated that corporate raiders covet those surplus assets and in some cases see them as a means to finance an acquisition. Overfunded plans could be a positive factor in takeover situations even if excess assets could not be retained for corporate use. This argument assumes that companies with overfunded pension plans might provide a synergistic combination with other companies that have underfunded pension plans. In addition, the acquirer may be able to reduce the future contributions significantly.

There have been no systematic empirical tests of the hypothesis that overfunded pension plans play a significant role in takeovers. However, the press has asserted that there is some casual empirical evidence which is consistent with this hypothesis. For example, as reported in *Wall Street Journal* (September 11, 1985, p. 5), Mobil Corporation terminated Superior Oil Co.'s pension plan to recapture \$29 million; St. Regis Corp., acquired by Champion International Corp., terminated its plan for \$88 million; and Jonathan Logan, Inc.'s, plan was terminated for \$5 million by acquirer United Merchants and Manufacturers, Inc. In a recent battle for control by Revlon, Inc., Pantry Pride, Inc., stated that it had intended to use \$88 million of Revlon's surplus pension plan assets to help finance the acquisition. This caused Revlon's Board of Directors to look for ways to make their funds inaccessible. Union Carbide adopted a pension parachute aimed at denying a hostile acquirer access to its surplus assets. In addition, Carbide's surplus assets could be used at the discretion of the board to increase pension benefits in the case of an unfriendly takeover. Furthermore, some analysts believe that a later corporate restructuring plan resulting in Carbide's recapturing \$500 million of surplus pension assets was motivated by Carbide management's desire to fend off a potential takeover threat by GAF Corp., which had acquired just under 10% of Union Carbide common stock.

Adoption of pension parachutes does not necessarily mean that overfunded pension plans would no longer be a consideration in takeover activity. In 1973, the Great Atlantic & Pacific Tea Co. adopted a pension parachute to fend off a threatened takeover by Gulf and Western Industries, Inc. However, the parachute did not achieve its purpose. In 1979, the company was taken over by Tengelmann Group of West Germany, and two years later A&P eliminated the parachute, terminated the pension plan, and recaptured \$250 million of excess

assets. The company was sued by the employees, and the case was settled out of court for \$50 million. Although more and more restrictive pension parachutes now are being designed to keep the new board from amending them, there is some probability that hostile suitors would find a way to circumvent these restrictions.

In addition to the instances previously described, a study by Oppenheimer & Co. suggesting a strong link between overfunded pension plans and takeovers has received wide publicity. The study finds that there is a strong correlation between the degree of overfunding of a firm's pension plan and the number of 13D filings on the firm. Filing of 13D reports with the U.S. Securities and Exchange Commission is required by investors acquiring 5% or more of a firm's stock. This finding has been interpreted to suggest that overfunding of pension plans is motivating some investors to acquire these firms gradually. Further, this study suggests that many of the companies with overfunded pension plans have been involved in takeovers or takeover rumors. The study ranked the S&P 400 companies according to the funding status of pension plans relative to the value of their common stock. It was found that the five companies with the highest overfunding-to-common-equity ratio had at one point repurchased a portion of their stock or had 13D reports filed with the Security and Exchange Commission. Listed are the names of these companies and the related overfunding information:

| <i>Company</i> | <i>Excess Assets</i> | <i>Excess Asset as a Percent of Common Equity</i> |
|-------------------------|----------------------|---|
| Martin Marietta Corp. | \$429.3 | 133.5 |
| A & P | 317.1 | 96.3 |
| Interlake Inc. | 133.6 | 41.3 |
| Firestone Tire & Rubber | 373.0 | 28.6 |
| Celanese Corp. | 280.0 | 26.9 |

According to an article in *Pension & Investment Age* (May 14, 1984), Norman Weinger, the senior vice president who produced the report, stated that investors and companies have begun to realize that over-funding can constitute a hidden asset for a firm and, hence, the funding status is having an important impact on corporate investment. Donna Bader, an Oppenheimer research associate involved in the study, added that pension plans can be particularly important in evaluating potential takeover targets.

In summary, the financial press has stressed that an overfunded pension plan can make a company a very attractive acquisition target because the acquiring company can terminate the pension plan, recapture the surplus assets and start a new plan. However, there is a missing link in this argument. There is a great deal of empirical evidence that the stock market is efficient with respect to publicly available information. That is, stock prices reflect all publicly available informa-

tion and, hence, abnormal profits cannot be made by designing strategies based on that information. So the crucial question in linking overfunded pension plans to takeovers is who is aware of the existence of surplus assets in the pension plan of a potential target. If stock market participants are knowledgeable about the existence and value of these assets, then there is no convincing reason to believe that an acquirer can take over a target without paying a fair market value for these assets. Hence, the attraction of the target due to the presence of these assets disappears. A possible scenario for excess pension assets to influence the takeover decision by an acquiring company is that these surplus assets are truly hidden assets, and the acquiring company has private information regarding their value. It seems highly unlikely that the acquiring company can be knowledgeable about the company with excess pension assets and the rest of the stock market unaware of this information. Thus, it is not clear how the existence of excess pension assets can make a company a particularly attractive target, especially when one takes into account that a takeover can result in some inefficiencies. The acquiring company may not be particularly knowledgeable about the business affairs of the target, or the takeover may lead to excessive administrative or bureaucratic costs (Williamson, 1987). In addition to a weak theoretical link between excess pension assets and takeovers, there is also a lack of systematic empirical investigation of this relationship. That is, while it is likely that a merger would result in wealth transfer from employees, it is not clear why an acquiring firm would be the beneficiary of that transfer.

D. Managers

The effect of mergers and acquisitions on the wealth and incentives of managers of the firms has received some attention in the literature. Even though the managers provide a factor of production to the firm as do the other participating agents, their operational responsibility of negotiating all contracts on behalf of the firm gives them privileged access to the insider information about the firm. When their own jobs and welfare are threatened in a merger or acquisition, these managers have the opportunity to exploit their privileged access to information in their own personal interests. The dual role of the senior managers of firms (one as an economic agent looking out for their own economic interests, and second as a hired agent to act in behalf of others in running the firm) renders the task of analyzing their behavior and wealth effects extremely difficult.

In his study of 355 successful takeovers in the United Kingdom, Firth (1980) found that the takeovers were associated with an average increase of 33% in managerial remuneration as compared to a 20% increase for a control sample of firms not involved in takeovers. This large abnormal increase in managerial compensation occurred at the same time as the shareholders of these firms were suffering a loss of over one billion pounds sterling in the value of their stocks.

As with other employees, managers, especially at the target firms, may lose

their jobs, benefits, unvested pension benefits, status, and self-esteem. Anticipation of managerial reorganization that usually accompanies many mergers and acquisitions paralyzes the managerial effectiveness for months if not years. During this period of uncertainty, everybody waits for the axe to fall and little work gets done as the managers rush to the phones to return the calls from headhunters and to hunt for them. The best managers of the acquired firms are the first ones to leave because there is a ready demand for their services. Those who cannot find jobs elsewhere are the ones more likely to stay. Under these conditions, the efficiency of the merged firm may decrease rather than increase. Indeed, it is a rare merger that shows increased profits in the merged operations in the first year or so.

While the middle and lower level managers may be innocent bystanders in the process of merger and acquisition, it is not so for the senior management. Their operating responsibilities place them in the best position to know if a particular proposal to acquire their firm is in the interests of various agents in their firm. However, because the management of the acquired firm is also very likely to lose their jobs upon a successful transaction, they do not have the incentives to reveal truthfully what they know to the other agents such as the shareholders or the board of directors. Some firms seek to remedy this problem by offering "golden parachute" job contracts to the managers who become entitled to generous severance pay and other benefits in case of an acquisition. The process of negotiating such arrangements is itself full of conflict of interest. In many companies, the size of such managerial settlements has been very significant in relation to the total value of the transaction, and no satisfactory solution to this problem seems to have been found so far. No systematic study is known to have been conducted to determine if the managers as a group, and different classes of managers, are net beneficiaries or net losers from mergers and acquisitions.

Recently, managerial efficiency motives for takeover have received a great deal of attention. It is argued that corporate takeovers shift control of an acquired firm's assets from a relatively inefficient management to the superior managers of the acquiring firm. Mergers are motivated by the suboptimal management policies of target firms. Easterbrook and Fischel (1981 p. 1173) state that:

When the difference between the market price of a firm's shares and the price those shares might have under different circumstances becomes too great, an outsider can profit by buying the firm and improving its management. . . . The source of the premium is the reduction in agency costs, which make the firm's assets worth more in the hands of the acquirer than they were worth in the hands of the firm's managers.

Similarly, Jensen and Ruback (1983, p. 5) point to the notion of efficiency improvement by managerial displacement as one of the motives of takeovers:

Competition among managerial teams for the rights to manage resources limits divergence from shareholder wealth maximization by managers and provides the mechanism through

which economies of scale or other synergies available from combining or reorganizing sources of conflict.

Although most of the empirical research conducted in recent years bears on the question of the aggregate efficiency effects of takeovers, there is a limited amount of research designed to test the improved management hypothesis directly. Scherer (1984) conducted a case study of 15 divestments to examine: (1) whether the acquiring firm management had substantial knowledge of the target business; (2) whether the acquirer had plans for any kind of restructuring; and (3) whether the acquired firm management was deemed efficient by the acquirer. He found that in a majority of cases the acquired firms had been deemed efficiently managed by the acquirers, who intended no managerial renovation. Bearing in mind the typical problems associated with drawing inferences from case-study research, Scherer's (1984) findings are inconsistent with the hypothesis that efficiency enhancement by managerial displacement is the prime motive for takeovers.

Malatesta (1983) argues that the improved management hypothesis implies that a period of inefficient management is a prerequisite for merger. When investors become aware of suboptimal management policies being pursued, the firm becomes an acquisition candidate. In his empirical investigation of the improved management rationale for mergers, Malatesta (1983) found that merger-related announcements were associated with positive share price reaction for acquired firms. However, large negative returns were realized on the price of the shares of acquired firms over periods well before the date of announcement or release of merger-related information. The average cumulative abnormal dollar return to the acquired firm during a 60-day period prior to the merger-related information release was -9.42 million dollars. Although the mean cumulative abnormal dollar returns were not statistically significant, Malatesta points out that the estimate is upward biased because only successful mergers were included in the sample. He concludes that the results are consistent with the predictions of the improved management hypothesis. However, Malatesta (1983) found that the acquiring firms results conflict with the predictions of the improved management hypothesis. This hypothesis predicts a positive cumulative abnormal dollar return for successfully acquiring firms. For his sample of acquiring firms, the cumulative abnormal dollar return during the five years leading up to and including the approval announcement is significantly negative. In addition, he found that over the five months prior to and including the approval announcement, the acquiring firm cumulative dollar return is -27.6 million dollars. Malatesta concludes that the evidence implies that the impact of merger on acquiring firms is negative and, hence, is inconsistent with the improved management hypothesis.

In summary, the empirical evidence concerning the improved management motive for takeovers is ambiguous. In addition to simple incompetency, there are several potential sources of conflict between stockholders and managers that can

lead to inefficiency or stockholder-manager conflict. First, managers like most other people are likely to be effort-averse. Thus, to the extent perfect monitoring of managerial effort is too costly, managers are likely to exert suboptimal effort leading to inefficiencies. Second, whereas the stockholders of a firm can diversify their portfolios of stockholdings, a substantial amount of managers' wealth including human capital is tied to the performance of the firm. Assuming that managers are risk-averse, this can lead to managers' engaging in suboptimal risk-taking behavior. Further, managers and stockholders have different time horizons that can lead to a focus on short-term performance at the expense of long-term optimization. These conflicts and associated inefficiencies may provide motives for outsiders to take over. Jensen and Ruback (1983) state that "takeovers serve as an external control mechanism that limits major managerial departures from maximization of stockholder wealth."

Whereas the conflict between stockholders and managers of a firm can make it an attractive target firm as discussed earlier, the same stockholder-manager conflicts within an acquiring company may be motivating the merger. Risk aversion on a manager's part may lead a manager to engage in diversification through mergers even though merger may not be a positive net present value project. Amihud and Lev (1981) present empirical evidence which indicates that management-controlled firms have a higher tendency to engage in merger activity than owner-controlled firms. However, Amihud and Lev did not examine whether management-controlled firms engage in less profitable or more risk-reducing mergers than owner-controlled firms.

Further, managerial compensation considerations may lead firms to engage in size-maximizing behavior, even at the expense of stockholder interest. Mueller (1969), Penrose (1959), Reid (1968), and various other authors have argued that a direct link exists between merger activity and size-maximizing behavior by acquiring firm managements. Malatesta (1983) argues that an implication of the size-maximizing hypothesis is that at the margin, merger attempts are negative net present value investments for acquiring firms. His results indicate that acquiring-firm stockholders suffer wealth losses both immediately before and well before a merger, and he concludes that merger is a negative present value project for acquiring firms. He states that although his results tend to support this size-maximizing hypothesis, they may be influenced by arbitrary details of the experimental design of his study.

It is often argued that mergers may be motivated by management's desire to change the capital structure of the firm. Some of the rationales for changing the capital structure are related to the possession of private information regarding the firm by the managers and their incentives to maximize their own wealth. For example, one explanation for changing the debt-to-equity ratio of the firm has been that it can serve as a signalling device. Ross (1977), introducing signalling theory to finance, suggests that implicit in the Miller-Modigliani divided irrelevancy proposition is the assumption that the market knows the random return

stream of the firm and values this stream to set the value of the firm. He argues that there is a difference between the actual and perceived stream of returns, and that it is the perceived stream that is valued in the marketplace. Changes in the capital structure may change the market's perception. Managers possessing private inside information about the firm's expected cash flows will choose to establish unambiguous signals about the firm's future if they have the proper incentives to do so.

Grossman and Hart (1982) argue that debt could serve as an incentive bonding device. Consistent with the bonding argument by Grossman and Hart, Jensen (1986) presents the free cash flow hypothesis of increasing debt in the capital structure of the firm. He argues that conflicts of interest between shareholders and managers over payout policies are especially severe when the organization generates substantial free cash flow. Free cash flow is cash flow in excess of that required to fund all projects that have positive net present values. By issuing debt in exchange for equity stock, managers can bond their promise to pay out future cash flow to the shareholder-recipient of the debt in the form of interest and principal repayment. The threat of failure to service debt and being taken into bankruptcy serves as a strong motivating force to make organizations with free cash flow act in shareholder interests by reducing the free cash flow available for spending at the discretion of managers.

Consistent with the above arguments for the existence of an optimal debt and equity mix in the capital structure of the firm, several authors have advanced a capital structure rationale for takeovers. For example, Jensen (1986) relates the benefits of creating debt in motivating managers and their organizations to be efficient to the free cash flow theory of takeovers. It is argued that debt creations without retention of the proceeds of the issue enable managers more effectively to bond their promise to pay out future cash flows than is possible through a promise of increased dividend payments in the future. For example, by exchanging equity for debt managers commit themselves to pay out future cash flow in terms of interest and principal payments. This reduces managerial discretion in spending future cash flows resulting in an effective control of agency costs of free cash flow. Jensen argues that many of the benefits from leveraged buyouts and going private transactions appear to be due to this control function of debt. He states that organizational changes accompanying these transactions lead to advantages in controlling the agency costs of free cash relative to the original open corporate form.

In support of his hypothesized benefits of debt creation being a motivating factor, Jensen states that desirable leveraged buyout candidates are often firms or segments of larger firms which have a healthy performance history and substantial free cash flows due to low growth prospects and high potential for generating cash flows. These are the situations where agency costs of free cash flow are likely to be high and, hence, larger benefits can be realized due to the control function of the debt. As evidence, he notes that leveraged buyout transactions are

financed with a very high proportion of debt relative to equity. Jensen suggests that the use of strip financing and the allocation of equity in these transactions are further indicators of the benefits of these transactions due to the control function of debt.

Further, Jensen (1986) suggests that empirical evidence from the oil industry is consistent with the control function of debt serving as a motivating factor for takeover. He states that a ten-fold increase in the price of crude oil from 1973 to 1979 created large cash flows in the industry. Instead of paying out the excess resources to shareholders, the industry continued to spend heavily on exploration and development even though average returns on these expenditures were below the cost of capital. As a result, firms in the industry were led to merge, and in the merging process they paid out large amounts of capital to shareholders and increased the debt in their capital structure. However, Jensen points out that actual merger or takeover is not necessary to bring about the adjustments suggested by the control function of debt motivation for mergers in free cash flow situations. For example, the Phillips restructuring plan in response to the takeover threat resulted in a repurchase of 53% of its stock for \$4.5 billion in debt and a substantial return of resources to shareholders. Similarly, Unocal's defense against the Mesa tender offer resulted in a payout of 52% of its equity by repurchasing stock with a \$4.2 billion debt issue. Thus, there are a significant number of instances that are consistent with a control function of debt hypothesis. However, we are not aware of any systematic empirical investigation of this hypothesis where the influence of other factors is properly taken into account.

In a recent study, Herman and Lowenstein (1986) present, among other results, evidence bearing on the capital structure adjustment rationale for takeovers. They examine 56 hostile tender offers that were initiated in the years 1975–1983. The proposed takeovers in this study were hostile in the sense that they began as unsolicited offers. In their sample, the target company was ultimately acquired by some other company, and neither the successful bidder nor the target was a bank, insurance company or other financial institution, or a real estate firm. In order to test the capital structure adjustment rationale, they examine whether the debt and equity mix in the capital structure of target firms differs from that of bidder firms. They find that the debt-to-equity ratios for the two groups were not very different during the 5-year period prior to the year of the initial announcement of the bid. In fact, they found that the mean ratio for the five years prior to the year of announcement was 74% for both bidders and targets. In addition, they found that the coverage of fixed charges of the target firms improved substantially during the two years immediately preceding the bid, and this improvement in coverage of fixed charges could not be attributed to any reduction in the financial leverage of the target firms. Thus, their evidence does not lend support to the view that the bid was motivated by the underutilization of debt by the target firms.

Improvement in the coverage of fixed charges despite a lack of reduction in the

debt-to-equity ratios of the target firms suggests that these firms may have improved their operating results. Herman and Lowenstein (1986) state that given that the targets are not underleveraged relative to the bidders, the evidence does not lend support to the notion that these transactions were motivated by the potential increases in efficiencies from more aggressive borrowing. However, Herman and Lowenstein (1986) results indicate that the debt-to-equity ratio of all bidders as a group increased significantly as a result of the takeovers. In this sample, debt was over 90% of the equity in the third full year after the takeover.

Similarly, they found that the coverage of fixed charges for all bidders as a group declined significantly as a consequence of the target takeover. This decline in coverage of fixed charges was long-term. For example, the coverage of fixed charges in the fifth year after the takeover was 3.75 relative to 4.9 in the year immediately prior to the takeover. Herman and Lowenstein (1986) state that this increase in the financial leverage and the decline in coverage ratios were expected, as hostile tender offers are financed almost entirely by borrowed money or by new debt securities issued directly to the target shareholders. It appears to us, however, that these results are inconsistent with Herman and Lowenstein's conclusion, based on the comparison of the financial leverage of bidders and target, that potential gains from more aggressive financing policy cannot be responsible for these takeovers. In fact, their results appear to be entirely consistent with potential sources of gains due to increased leverage through takeovers. However, these results cannot be interpreted to provide direct support to Jensen's control function of debt rationale for takeovers, because the authors did not investigate the extent of the agency costs of free cash flows in their sample.

In summary, the control function of debt in situations where agency costs of excess cash flows are extremely severe has been among the explanations advanced for creation of debt through takeovers. Empirical support for this hypothesized source of gain from creation of debt through takeover is very limited. There is some casual empirical evidence consistent with the control function of debt hypothesis for takeover. However, we are not aware of any scientific empirical investigation of the significance (statistical or economic) of the gains from this source in takeovers. An empirical study bearing on the extent of gains from this source would be an important next step in gaining further understanding of factors motivating takeovers.

E. Financial Intermediaries

Financial intermediaries, mostly investment bankers and the cooperating teams of lawyers and accountants, are net beneficiaries of merger and acquisition activity. It is not unusual for these professionals to net fees of a few percentage points of the value of the transaction. From the point of view of the other participating agents in the firm, the share of the wealth that goes to these profes-

sionals is a deadweight loss. In reckoning the wealth flows associated with mergers and acquisitions, these amounts should not be ignored.

Investment bankers usually negotiate a percentage fee which is contingent on completion of a successful transaction or defense, depending on who has hired them. Accountants, prohibited by their code of ethics from accepting contingent fees, bill for their services at an hourly rate. Their fees rarely amount to more than a fraction of the bankers' share. The law firms have traditionally billed on an hourly basis, though some of them have recently been tempted to go the route of the investment bankers. The fee arrangements of each type of professional induce different incentives for them. A banker paid on a contingent basis may push for completion of a deal even if it is not in the best interests of the client if the only way the banker can get paid is to complete the deal. On the other hand, professionals who are paid on the basis of the number of hours spent may have no stake in bringing the negotiations to a close.

F. Customers

A merger or acquisition may reduce competition in the product market, reduce the bargaining power of the customers and lead to a higher price or lower quality. If this happens, the welfare gains to the other participating agents in the firm may arise not from the increased efficiency but from the transfer of wealth from the customers. Economic deregulation of the late seventies and the early eighties has led to considerable concentration of market power in the airline, railroad, and trucking industries (see *Business Week*, 1986, p. 50). The early effects of this deregulation have been to reduce prices in all three sectors through resource transfers from employees (lower wages) and higher operational efficiencies. Whether these reductions in product and service prices will be sustained over a period of time remains to be seen. We have discussed the market power rationale for mergers and the related evidence in an earlier section of the paper. To the extent mergers result in increased market power and monopoly rents in product markets, there is a wealth transfer from customers to the other agents participating in the firm.

G. Vendors

As in the product markets, mergers and acquisitions may also increase the market power of the resultant entity in the factor markets to the detriment of its vendors. In such cases, a part of the wealth of the vendors will be transferred to the other participating agents in the firm. We have already discussed the case of employees and managers. Producers of specialty products with high elasticity of supply are particularly vulnerable to such shifts in the market power of their trading partners.

H. Competitors

Mergers and acquisitions of firms affect their competitors in two ways. First, if the merger results in higher concentration in the industry, the merged firm might be able to raise its product prices and thus benefit its competitors. On the other hand, the larger market share of the merged firm may make it a more formidable competitor who is able to take away markets from its competition. Thus the wealth effect of a merger in the industry is likely to be mixed. Indeed, the empirical evidence reviewed earlier about the market power hypothesis is ambiguous.

I. Government as a Taxing Authority

Government is a significant partner in all business ventures. Mergers and acquisitions are no exception. Businessmen are free to arrange their transaction in a way so the net transfer of wealth to the government as a taxing authority is minimized under the applicable tax laws. Beside direct tax planning, corporations can also seek tax advantage through appropriate choice of capital structure.

In 1981, the federal income tax law permitted significantly more generous rates of depreciation for tax purposes. Once the tax benefits on depreciated assets were exhausted, it would have been advantageous for the firms holding such assets to sell such assets to other parties. In spite of the recapture provisions of the tax law, the taxpayer would benefit from the interest-free loan from the government for the interval between the initial tax deduction and the depreciation recapture. Sale of individual assets, however, is too disruptive for the efficiency of the production process. It is more efficient to sell the entire factory of the division whose assets had essentially been depreciated for tax purposes. Perhaps a part of any mergers and acquisitions may be motivated by tax reasons, and a part of the wealth transfer equation of such reorganizations relates to the direct involvement of the federal government in its role as the taxing authority.²

J. Community

Mergers and acquisitions usually involve significant wealth transfers between the firm and the community. These transfers take several forms.

First, the employees laid off by the firm have to be supported by the community through unemployment benefits and social and medical services for those who can no longer afford them. Second, the community may suffer a smaller tax base due to the out-migration of its members. Many communities offer significant incentives in the form of lower tax rates and tax-advantaged borrowing in order to attract businesses to locate in their midst. They make investments in their infrastructure in anticipation of the demand for their services. In case of a merger or acquisition, the new management of the firm may no longer feel obli-

gated to meet the explicit or implicit obligations to the community negotiated by the management of the target firm. Many of these obligations are not enforceable by law.

Finally, a merger or acquisition may lead to removal of the corporate or divisional headquarters of the firm from the community and deprive it of the largess that usually flows from the charitable and philanthropic activity of the firm.

VI. SUMMARY AND CONCLUSIONS

Modern corporations are complex sets of contracts among a large number of economic agents. Mergers and acquisitions modify and rearrange these contract sets in significant ways and therefore affect the welfare of practically all agents involved in the firm. The dominant theme in merger and acquisition research has been their effect on the welfare of the shareholders and other security holders. We suggest in this paper that such an approach is unnecessarily restrictive. Instead, it is more enlightening to examine mergers and acquisitions from the point of view of all major classes of agents whose economic interests are affected by these events. By an elementary examination of mergers and acquisitions from this broader point of view, we make a beginning towards creating a basis for an economic theory of corporate reorganizations.

NOTES

1. Note that we are using the term factor broadly to include all resources that flow between the firm and various agents. Thus our use of the term factor includes factors, products, and cash in the usual sense of those terms.
2. A discussion of the choice of capital structure is given in the section on managers.

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