Ownership of the Firm

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1. INTRODUCTION

Most large-scale enterprise in the United States is organized in the form of the conventional business corporation, in which the firm is owned collectively by investors of capital. Other ownership patterns are prominent in a number of important industries, however. Many firms, for example, are owned by their customers. These include not just consumer retail cooperatives, which are relatively rare, but also business-owned wholesale and supply cooperatives, which are quite common, as well as public utility cooperatives, mutual insurance companies, mutual banking institutions, and cooperative and condominium housing. Further, many firms are owned by persons who supply the firm with some factor of production other than capital. Worker-owned firms, which predominate in professional services such as law and accounting, are conspicuous examples, as are the agricultural processing and marketing cooperatives that dominate the markets for many farm products. Finally, a number of important service industries are populated heavily by nonprofit

Helpful comments on previous drafts, which bore the title "Toward A General Theory of Corporate Ownership," were offered by Bruce Ackerman, Bengt Holmstrom, Reinier Kraakman, Michael Levine, Saul Levmore, Roberta Romano, Alan Schwartz, Jeff Strnad, and Oliver Williamson; by participants in the Conference on the Economies of Corporate and Capital Markets Law at Harvard Law School and the Conference on the Economics of Institutional Choice and Design in Vienna; and by participants in workshops at Berkeley, New York University, the University of Toronto, and Yale. Generous research support was provided by the John Simon Guggenheim Memorial Foundation and the Yale Law School.

Journal of Law, Economics, and Organization vol. 4, no. 2 Fall 1988
 ISSN 8756–6222

firms, which have no owners at all. In this essay I explore the economic factors responsible for these different patterns of ownership.

In recent years a number of scholars have examined various aspects of enterprise ownership. In particular, Williamson (1986) and Klein, Crawford, and Alchian have dealt insightfully with the influence of transaction-specific investments on the assignment of ownership, and I shall draw heavily here on the concepts they have developed. Similarly, a number of writers have looked at questions of ownership in particular contexts. A particularly common focus has been worker ownership versus investor ownership, which has been examined thoughtfully by, among others, Jensen and Meckling (1979). This essay extends the work of these and other authors (for example, Fama and Jensen, 1983) by viewing ownership in a more general framework. In the process, I seek to provide better perspective on existing theories, develop some significant considerations that have previously been neglected, and offer a more comprehensive and convincing explanation for the prominence of non-investor-owned firms in many important industries.

The primary focus here is on firms, such as the publicly held business corporation, in which ownership is shared among a numerous group of persons. One reason for this emphasis is that such firms are the dominant actors in the contemporary economy. But another reason is that widely shared ownership gives rise to problems that call for special attention. In particular, one of the central themes of this essay is that large costs can be engendered by conflicting interests when the ownership class is heterogeneous, and that these costs are a primary determinant of the relative efficiency of alternative assignments of ownership. Such costs have previously received little attention in the literature on the organization of the firm.[1]

Although this inquiry is largely an exercise in positive social science, it also has an important policy dimension. There is considerable enthusiasm today for forms of ownership other than the conventional capitalist firm. This is particularly true of worker ownership, which is being promoted by large tax preferences, by the recently charted National Cooperative Bank, and by special corporation statutes for employee-owned firms that have been enacted in several states and are on the legislative agenda in others.[2] It is important that we have some understanding of the efficiency of these alternative forms of ownership.

Furthermore, by considering patterns of ownership in general, we can achieve a better appreciation of the strengths and weaknesses of the type of

1. For example, Williamson's work focuses most closely on situations involving single owners, as in his analysis of the considerations bearing on the efficiency of vertical integration between two firms. He himself has noted the need for further investigation of the relative efficiency of collective ownership of the firm by labor and other parties ("The Producer Cooperative Dilemma," 1986: 265–68).

2. One example is the Massachusetts Employee Cooperative Corporations Act, Mass. Gen. Laws Ann. ch. 157A (West 1987). Connecticut, New York, Vermont, and Washington have adopted similar statutes.

investor ownership that is the norm in our economy. For example, we can obtain important insight into the familiar problem of the separation of ownership and control in large firms, and into the significance of the market for corporate control as a means of dealing with this problem.

A general theoretical framework is set out in Section 2. That framework is then illustrated and elaborated in subsequent sections by application to the ownership patterns that appear in a number of different industries. Section 3 deals with investor-owned firms. Section 4 examines customer-owned retail, wholesale, and supply firms—an important and interesting class of firms that has largely been neglected in the economics and legal literature. Section 5 deals with worker-owned firms and seeks to offer a more convincing explanation for their pattern of development than has previously been given. In Sections 6 and 7 I then consider, more briefly, utility cooperatives, mutual insurance companies, and nonprofit firms.

2. A THEORETICAL FRAMEWORK

2.1. The Structure of Ownership

A firm's "owners," as the term is conventionally used and as it will be used here, are those persons who share two formal rights: the right to control the firm and the right to appropriate the firm's residual earnings.[3] The reference here to "formal" rights is important. Often the persons who have the formal right to control the firm—which typically takes the form of the right to elect the firm's board of directors—in fact exercise little effective authority by this means over the firm's management. It is sometimes said that the owners of such firms do not "control" them—hence the familiar references to the "separation of ownership and control." Nevertheless, I shall be concerned here principally with explaining the way in which the *formal* (legal) rights to control and residual earnings are assigned. Indeed, an important implication of the analysis and examples offered below is that it is often efficient to assign the formal right of control to persons who are not in a position to exercise that right very effectively.

In theory, the rights to control and to residual earnings could be held by different persons. In practice, however, they are generally joined, since those with control would otherwise have little incentive to use their control to maximize the residual earnings. To be sure, if all aspects of control could be contracted for ex ante, then this problem would not arise. But control can usefully be thought of as authority over precisely those aspects of firm policy that, because of high transaction costs or bounded rationality, cannot be

3. The term "residual earnings" is used here to encompass all net returns to the firm, including net current earnings and the net increase in capital value of any assets or other rights that the firm itself owns.

specified ex ante in a contract, but rather must be left to the discretion of those to whom the authority is granted (Grossman and Hart).

Nevertheless, not all firms have owners in the sense defined here. In particular, nonprofit firms are characterized by the fact that the persons who have formal control of the firm are barred from receiving its residual earnings (Hansmann, 1980). The same considerations, however, that determine the class of persons to whom ownership is efficiently assigned also determine when it is efficient for a firm to have no owners at all.[4]

In the discussion that follows it will be helpful to have a term to comprise all persons who transact with a firm, either as purchasers of the firm's products or as suppliers to the firm of some factor of production, including capital. Such persons—whether they are individuals or other firms—will be referred to here collectively as the firm's "patrons."

Most firms are owned by persons who are also patrons. This is conspicuously true of producer and consumer cooperatives. It is also true of the standard business corporation, which is owned by persons who lend capital to the firm. In fact, the conventional investor-owned firm is in a sense nothing more than a special type of producer cooperative—a lenders' cooperative, or capital cooperative. Because we so commonly associate ownership in general with invested capital, and because the comparison of investor-owned firms with (other types of) cooperatives will be at the core of the analysis that follows, it may be useful to elaborate on this point.

Consider, first, the structure of a typical producer cooperative. A representative example is a dairy farmers' cheese cooperative, in which a cheese factory is owned by the farmers who provide the raw milk for the cheese. The firm pays the members a predetermined price for their milk on the occasion of each sale. (In keeping with conventional usage, the term "member" will be used here to refer to the patron-owners of cooperatives.) This price is usually set low enough so that the cooperative is almost certain to make a profit from its operations. Then, at the end of the year, profits that have been earned from the manufacture and sale of the cheese are distributed pro rata among the members according to the amount of milk they have sold to the cooperative during the year. Voting rights are held only by those who sell milk to the firm, either on the basis of one-member-one-vote or with votes apportioned according to the volume of milk each member sells to the firm. Some or all of the members may have capital invested in the firm. In principle, however, this is unnecessary: the firm could borrow all of the capital it needs. In any case, even where members invest in the firm, those investments typically take the form of preferred stock that carries no voting rights and is limited to a stated maximum rate of dividends. Upon liquidation of the firm, the net asset value—which may derive from retained

4. Although I shall briefly consider private nonprofit enterprise below, I shall largely ignore the interesting case of governmentally owned firms. But see note 58.

earnings or from increases in the value of rights held by the firm—is divided pro rata among the members, usually according to some measure of the relative value of their cumulative patronage.

In short, ownership rights are held exclusively by virtue of the fact, and to the extent, that one sells milk to the firm. On the other hand, not all farmers who sell milk to the firm need be owners; the firm may purchase some portion of its milk from nonmembers, who are simply paid a fixed price and do not participate in net earnings or control. (Consumer cooperatives are set up similarly, with net earnings and votes apportioned according to the amounts that a member purchases from the firm.)

A business corporation is also organized in this fashion, except that it is owned not by persons who supply the firm with some commodity, such as milk, but rather by some or all of the persons who lend capital to the firm. To see the analogy clearly, it helps to characterize the transactions in a business corporation in somewhat stylized terms: The members each lend the firm a given sum. For this they are paid a fixed interest rate, set low enough so that the firm has a reasonable likelihood of running at a profit. Then at regular intervals, or upon liquidation, the firm's net earnings (after all contractual expenses, including wages and the cost of materials as well as the fixed interest rate on the capital borrowed from the members, have been paid) are distributed pro rata among the lender-members according to the amount they have lent. The firm may also have lenders who are not members. These lenders, commonly banks or bondholders, simply receive a fixed market interest rate and have no share in profits or participation in control.

As it is, in a business corporation the interest rate that is paid to lender-members (that is, shareholders) is generally set at zero for the sake of convenience. Moreover, the loans from members are not arranged annually or for other fixed periods, but rather are perpetual; the principal can generally be withdrawn only upon dissolution of the firm. In the typical cooperative, by contrast, members generally remain free to vary their volume of transactions with the firm over time, and even to terminate their patronage altogether. This distinction is not, however, fundamental. Investor-owned firms can be, and sometimes are, structured so that the amount of capital invested by each member can be redeemed at specified intervals or even (as in a simple partnership) at will. Conversely, cooperatives can be, and often are, structured so that members have a long-term commitment to remain patrons. Electricity generation and transmission cooperatives, for example, commonly insist that their members (which are local electricity distribution cooperatives) enter into requirements contracts that run for thirty-five years.[5]

5. Similarly, farm marketing cooperatives sometimes require that members commit themselves to marketing a given volume of their output through the cooperative for a specified number of years. See Wisconsin Cooperative Corporation Act, Wis. Stat. Ann. §185.41 (West 1957) (explicitly providing for long-term marketing agreements). And mutual life insurance companies, in the early years of the industry, involved a lifetime commitment by their policy-

Indeed, we can view business corporation statutes as simply specialized versions of the more general cooperative corporation statutes. In principle, there is no need to have separate business corporation statutes at all; business corporations could just as well be organized under a well-drafted general cooperative corporation statute. Presumably we have separate statutes for business corporations simply because it is convenient to have a form that is specialized for the most common form of cooperative—the lenders' cooperative—and to signal more clearly to interested parties just what type of cooperative they are dealing with.[6]

In short, ownership need not be, and frequently is not, associated with investment of capital. Rather, lending capital is simply one of many types of transactions to which ownership of a firm can be tied. A general theory of enterprise ownership, therefore, must explain both why ownership is generally tied to transactions and what factors determine the particular class of transactions—whether lending capital, supplying other factors of production, or purchasing the firm's products—to which ownership is tied in any particular case. The following section outlines such a theory.

2.2. An Overview of the Theory

In principle, a firm could be owned by someone who is not a patron. Such a firm's capital needs would be met entirely by borrowing; its other factors of production would likewise be purchased on the market, and its products would be sold on the market. The owner(s) would simply have the right to control the firm and to appropriate its (positive or negative) residual earnings.[7] Such firms are rare, however. Ownership commonly is assigned to persons who have some other transactional relationship with the firm. The reason for this, evidently, is that the ownership relationship can be used to mitigate some of the costs that would otherwise attend these transactional relationships if they were managed through simple market contracting.

More particularly, market contracting can be especially costly in the presence of those conditions loosely called "market failure," such as market power or asymmetric information. In such circumstances, the total costs of transacting can sometimes be reduced by merging the purchasing and the selling party in an ownership relationship, hence eliminating the conflict of interest

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holder-members to continue paying on their policies, whose entire accumulated value would be forfeited to the company upon nonpayment of premiums (Hansmann, 1985).

6. Having said this, the term "cooperative" will be used below, as is conventional, to refer to patron-owned firms other than investor-owned firms, and without regard to whether the firm is organized under a cooperative corporation statute or (as is common for many cooperatives) under a business corporation statute or as a partnership.

7. To be sure, the exercise of control, even if it amounts only to the choice of a manager, may require some effort. The owner might therefore be considered a contributor of labor to the firm, and the residual earnings might be considered a return for that labor. Viewed this way, such a firm is simply a reductive form of worker-owned firm.

between buyer and seller that underlies or aggravates many of the avoidable costs of market contracting.

Ownership can itself involve substantial costs, however. Further, as we shall discuss below, these costs can be quite different for different classes of patrons. Efficiency will be best served if ownership is assigned to that total transaction costs for all patrons are minimized. This means minimizing the sum of both the costs of market contracting[8] for those patrons who are not owners, and the costs of ownership for the class of patrons who are assigned ownership. Thus, if there are N different classes of patrons who transact with a given firm, ownership will be assigned most efficiently to that class j that minimizes

$$CO_j + \sum_{\substack{i=1 \\ i \neq j}}^{N} CC_i \tag{1}$$

where CO_i and CC_i are, respectively, the cost of ownership and the cost of market contracting for class i. To the extent that efficient ownership forms are selected by market forces, or simply by rational choice among alternatives by the interested parties, the result will be the differential survival of those forms in which ownership is assigned to economize on transaction costs in this fashion.

To give this theory more substance, I will survey the most significant types of costs that attend market contracting and ownership, respectively. Because most of these categories of costs are familiar, this survey will be brief, emphasizing only those considerations that have not been well analyzed before and that have special bearing on problems of collective ownership.

2.3. The Costs of Market Contracting

Although a variety of factors can make market transactions costly, there are three characteristic types of problems that arise commonly and can often be mitigated by assigning ownership to the patrons involved.

Market Power. An obvious reason for assigning ownership to a given class of patrons is that the firm, owing to the relative absence of effective competition, has a degree of market power vis-à-vis those patrons. If, in such

8. The discussion here is framed in terms of two polar ways of structuring transactional relationships: market contracting and ownership. In fact, as Williamson (1986: ch. 3) has emphasized, a variety of different types of "governance structures" are available for transactions. In particular, what here is loosely termed "market contracting" can take various forms, ranging from simple spot market contracting, in which competition is essentially the only safeguard for the parties, to highly interdependent forms of "obligational contracting." In general, the term "market contracting" will be used here to comprise all forms of contracting other than ownership.

a situation, the patrons own the firm, they can avoid not only the efficiency losses that result from setting prices above marginal cost, but also the larger private costs that such prices would impose on the patrons.

Ex Post Market Power ("Lock-In"). As Williamson (1986: ch. 2) has noted, problems of price or quality exploitation can arise *after* a person begins patronizing a firm even when the firm has a substantial number of competitors at the time of initial contracting. These problems appear where the patron must make substantial transaction-specific investments[9] upon entering into the transactional relationship and where the situation is sufficiently complex that some elements of the transaction must initially be left unspecified and dealt with according to experience. Once such a transactional relationship has been entered into, the patron becomes locked in to a degree, losing the option of costless exit in case the firm seeks to renegotiate the terms of the transaction in its favor as events unfold. Ownership of the firm by the patron reduces the incentives for opportunistic behavior of this sort. This consideration is now widely recognized as an important incentive for vertical integration between individual firms (Williamson, 1986; chs. 4 and 5; Klein, Crawford, and Alchian). It can also help explain why ownership is extended to whole classes of patrons.

Asymmetric Information. Finally, contracting can also be costly when a firm has significantly better information than its patrons concerning the quality of performance that the firm offers or renders. Ownership by the patrons reduces the incentive for the firm to exploit such an information advantage.

Who Owns Whom? In the preceding discussion, I have been speaking of mitigating the costs of market contracting by having the patrons own the firm. Sometimes those costs could also be avoided by having the firm own its patrons. Where there is only one patron involved, and where that patron is itself a firm, there is frequently no distinction between these two forms of vertical integration. But, as Grossman and Hart have emphasized, the costs and benefits of ownership are sometimes asymmetric between the parties to a transaction; if the parties are to be integrated, one party may be the less costly owner. This is often the case in the situations of principal interest here, where multiple patrons are involved, and where the patrons are sometimes individuals: ownership of the patrons by the firm may be costly or infeasible where the reverse is not true. This is obviously the case when the patrons are individuals—customers or workers, for example—rather than firms; legal prohibitions on personal servitude as well as a variety of practical contracting problems then bar the firm from establishing effective ownership (and especially control) of its patrons. But ownership of the patrons by the

9. That is, investments whose value will be significantly reduced if the transaction is terminated.

firm may also be impractical even where the patrons are themselves firms. Consider, for example, the common case of wholesale cooperatives owned by the retail stores to which they sell. Ownership of the stores by the wholesaler may lead to loss of the strong incentives for efficient operation that exist when the stores are owned by their local managers, while the reverse is not true.[10]

2.4. Costs of Ownership

As already emphasized, the ownership relationship itself can involve substantial costs. The most significant of these costs can be grouped conveniently under three headings.

Monitoring. If a given class of patrons is to exercise effective control over the management of a firm, they must incur the costs of (1) becoming informed about the operations of the firm, (2) communicating among themselves for the purpose of exchanging information and making decisions, and (3) bringing their decisions to bear on the firm's management.[11] These costs, which Jensen and Meckling (1976) have labeled "monitoring" costs, can vary widely among different classes of patrons. They are most likely to be small, relative to the value of the patrons' transactions with the firm, where, for example, the patrons involved are relatively few in number, reside in geographic propinquity to each other and the firm, and transact regularly and repeatedly with the firm over a prolonged period of time[12] for amounts that are a significant fraction of their budget.

10. The essence of the problem is, as Grossman and Hart describe, that even when two parties have been vertically integrated some decisions must be left to the discretion of the original parties themselves. A local retail store manager's actions, for example, cannot be entirely controlled by the wholesaler even if the wholesaler owns the store; the manager necessarily retains some discretion over her own effort. Costs may be better internalized, therefore, if the manager is given (shared) ownership of the wholesaler, so that the residual returns from her personal actions, and control over those actions, are both left largely in her own hands.

11. It will be taken for granted here that a firm of any substantial size and complexity needs a hierarchical form of organization for decision-making, which means that the firm must have a single locus of executive power with substantial discretion and authority. This means that, where ownership of the firm is shared among a large class of patrons, highly participatory forms of decision-making will not be efficient. Rather, in such situations, control will generally be exercised by the firm's owners indirectly through election of the firm's directors; direct participation in decision-making will be confined to approval of major structural changes, such as merger and dissolution.

Williamson (1986: ch. 9) presents a convincing analysis of the advantages of hierarchical decision-making in the context of a discussion of worker management. He there argues for the superiority, in efficiency terms, of the capitalist firm with a strong central management over a highly participatory ("communal") form of worker ownership. By itself, however, Williamson's analysis simply shows the virtues of centralized management; it does not tell us which class of patrons, workers or lenders of capital (or yet some other group of patrons), can most effectively exercise the right to elect that management. (See Putterman; Russell, 1985a; and Williamson, 1985).

12. The importance of the frequency of transacting in making "unified governance"—essentially ownership—an efficient form for transactional relationships has been emphasized by Williamson (1986: ch. 3).

To the extent that the owners of the firm fail to exercise effective control over its managers, the managers are free to engage in self-dealing transactions and exhibit slack performance. As the literature on agency costs has emphasized, the costs from such managerial opportunism are sometimes smaller than the costs of effective monitoring, and thus it may be efficient for the owners to bear these costs rather than to seek to impose discipline on the firm's managers (Jensen and Meckling: 1976).

An equally important but less familiar point is that for a given class of patrons the costs of managerial opportunism may be worth bearing as an alternative to having no ownership at all. That is, just because a given class of patrons cannot monitor effectively, and thus cannot exercise much control beyond that which they would have simply by virtue of market transactions with the firm, it does not follow that there is no substantial gain to those patrons from having ownership of the firm. Or, to use Hirschman's terminology, it may be efficient to assign ownership to a given class of patrons even where, for those patrons, voice adds little to exit in the way of control. By virtue of having ownership, the patrons in question are assured that there is no *other* group of owners to whom management is responsive. It is one thing to deal with managers who are nominally your agents but serve you poorly; it is another to transact with managers who are actively serving owners with an interest clearly adverse to yours. Although managers may be able to appropriate, in the form of cash or perquisites, some of the potential gains from exploiting patrons, their ability to do this is limited. The self-dealing transactions necessary for managers to divert to themselves a significant fraction of the potential residual in a large firm will usually be difficult to conceal, and can generally be explicitly proscribed by contract or by law, thus exposing the managers to a variety of moral, contractual, tort, and criminal sanctions.[13] This is in contrast to the situation of owners, who can easily and lawfully distribute to themselves directly any net earnings that accrue to the firm from exploiting patrons. Owners thus have a much stronger incentive to engage in such exploitation than does management acting on its own.

To be sure, while legal, contractual, and moral constraints may effectively prevent most managers from taking grossly excessive compensation from the firm, they will not necessarily insure that managers work hard and make effective decisions. Thus, if the firm's owner-patrons are poor monitors, managers might nevertheless exploit them severely and then simply waste the resulting earnings through organizational slack—in effect extracting the po-

13. There is, however, one very costly managerial perquisite that may not be easy to proscribe or detect—namely, excessive retention of earnings. Retentions can benefit managers by creating a financial buffer against adversity and by increasing the size of the firm and thus the scope of the empire that they manage. To the extent that the returns from these retentions are below their opportunity cost, or simply cannot be recovered by the current owners of the firm whatever their rate of return to the firm, the owners stand to lose. The excessive financial reserves accumulated by mutual insurance companies seem to be a conspicuous case in point (Hetherington). This is arguably a problem in investor-owned firms as well (Jensen).

tential gains in the form of an easy life. But, while theory and empiricism on this issue both remain in flux, there is reason to believe that the incentive and opportunity for managers to engage in substantial waste in this fashion may be distinctly limited. For example, the desire of managers to keep and enhance their jobs, or to get another job in the future, probably serves as an important check on such behavior.[14] (See Holmstrom and Tirole for a thoughtful survey of the general issue.) Consequently, the fact that the firm's nominal owners are unable to exercise effective control may result in only a modest amount of organizational slack.[15] Indeed, large groups of firms have prospered over long periods of time in competitive environments without any effective exercise of control by owners whatever—and even without any owners.[16]

In summary, if all else is equal, then the patrons who are the lowest-cost monitors are the most efficient owners. But all else is often not equal; sometimes a class of patrons facing high costs of monitoring also faces unusually high costs of market contracting (owing, for example, to severe problems of asymmetric information). Those patrons may then be efficient owners, in spite of their high monitoring costs. The costs of market contracting that are avoided by giving such patrons formal ownership rights may well outweigh any accompanying increase in the costs of managerial opportunism. This was apparently the case with depositor-owned life insurance companies in the middle of the nineteenth century, and it is arguably true of most large investor-owned corporations today.

In the discussion that follows, the term "monitoring costs" will be used to denote the sum of (1) the costs actually incurred by the owners in monitoring management and (2) the costs of managerial opportunism that result from the failure to monitor perfectly. This is essentially equivalent to Jensen's and Meckling's (1976) "agency costs"; the term "monitoring costs" is used here simply to focus attention on the factor that determines the upper bound of these costs, namely the costs that the firm's nominal owners would incur if they were to oversee management effectively.[17]

Collective Decision-Making. When ownership of a firm is shared among

14. Incentive pay schemes, such as stock options, can also help align managers' interests with those of owners. But if the owners are not in direct control, they are presumably in a poor position to design the compensation mechanism.

15. This is an important point that is often neglected in the literature on corporate control, with its emphasis on the incentives for efficient management that accompany receipt of residual earnings (Jensen and Meckling, 1976). But see, for example, Jensen and Fama, who emphasize that a board with outside directors may exercise a significant check on managerial discretion even in nonprofit firms in which the directors are not in the service of owners.

16. See, in particular, the discussion of mutual life insurance companies and nonprofits below.

17. Jensen and Meckling include a third element, "bonding expenditures by the agent," in their definition of agency costs. These bonding costs are not distinguished here from the other costs undertaken to control the managers.

a class of patrons, a method for collective decision-making must be devised. Most commonly a voting mechanism of some sort is employed, with votes weighted by volume of patronage, although some cooperatives adhere to a one-member-one-vote scheme.[18]

As methods for aggregating the preferences of a group of patrons, such collective choice mechanisms often involve substantial costs in comparison to market contracting. Little attention has been devoted to these costs in the literature on corporate control and the economics of organizational form.[19] Nevertheless, they appear to be crucial in determining the efficiency of alternative assignments of ownership. These costs might, to be sure, simply be included as part of the monitoring costs discussed above. They appear to be of such special importance in determining the patterns of ownership actually observed, however, that they call for separate treatment.

Although a variety of factors influence the magnitude of these costs, a fundamental consideration is the extent to which the patron-owners have divergent interests concerning the conduct of the firm's affairs. Where the patrons involved all have essentially identical interests—for example, where they all transact with the firm under similar circumstances for similar quantities of a single homogeneous commodity, as in the case of the farmers' cheese cooperative described above—the costs associated with collective decision-making are naturally small.[20] Absent such circumstances, however, these costs may be large relative to those of market transactions. The costs can come in several different forms.

To begin with, even if no patron acts strategically such processes may yield decisions that are collectively inefficient in the sense that they do not maximize aggregate patron surplus. Thus, if the preferences of the median voter are not those of the mean, a majority voting mechanism may yield decisions that are not only inefficient but inferior, from a welfare standpoint, to those that would be reached if the patrons simply contracted as individuals with a profit-maximizing firm (Shepsle and Weingast). A more serious version of this problem can arise if one group of patrons self-consciously seeks to use

18. Jensen and Meckling (1979) assume that worker-owned firms universally employ a one-worker-one-vote decision rule, and they note the particular inefficiencies that can result from such a rule. In fact, however, cooperatives in which levels of patronage vary widely among patrons, such as the farm supply cooperatives discussed below, commonly employ patronage-weighted voting schemes.

19. A significant exception are Jensen and Meckling (1979), who refer to this issue as "the control problem." They do not analyze the issue in detail, observing simply that "no one today has a viable theory of . . . political processes" (488–89) and suggesting that the problem of reconciling diverging interests may be an important obstacle to worker-managed firms. They also make the important observation, which will be reaffirmed below, that one of the most important sources of the efficiency of investor-owned firms may be the limited opportunity they afford for advantaging one group of owners at the expense of another (494).

20. In theory, of course, even a group of perfectly homogeneous owners could incur substantial costs from use of a collective decision-making mechanism if arbitrarily constituted subgroups were to seek to take strategic advantage of that mechanism to exploit the other owners.

the collective choice mechanism to exploit another group—for example, by raising prices or cutting quality for services consumed primarily by the disfavored group. If becoming an owner requires making a transaction-specific investment that is at risk (such as a contribution of capital that is not easily recouped when the patron withdraws from membership in the firm), then the disfavored group could be much worse off as owners than if they dealt with the firm simply through market contracting.[21]

Further, the process of collective decision-making itself can have high transaction costs in the face of heterogeneous interests. Because there is a strong incentive for individuals to form coalitions to shift benefits in their direction, efforts to form and break such coalitions may consume substantial effort. The essential distinction between ownership and market contracting here is that when patrons deal with the firm simply through market contracting, they have no leverage over firm policy beyond the threat of withdrawing their individual patronage. With a collective decision-making mechanism, by contrast, subgroups of patrons with particular interests can often achieve disproportionate influence. Moreover, this problem is likely to be accentuated if, as is often the case, some patrons are better situated to participate effectively in collective decision-making than others—for example, because of geographic accessibility to the firm, low opportunity cost of time, or special managerial expertise.[22]

On the other hand, even where patrons diverge considerably in interest, the costs associated with collective decision-making may be low if there is some simple and salient criterion for balancing their interests. For example, where it is easy to account separately for the net benefits bestowed on the firm by each individual patron, dividing up net returns according to such an accounting is likely to be both natural and uncontroversial even if the nature and the volume of the transactions with individual patrons differ substantially. The empirical literature indicates strongly, however, that, in the absence of such a clear focal point for decisions, agreement may take a long time to reach and often in fact is never reached.[23]

21. For example, consider purchasing a top-floor apartment in a four-floor cooperative apartment building. Can one count on the occupants of the first three floors to support maintenance of the elevator or the roof?

22. It is not necessary to assume a high degree of venality on the part of the patron/members to expect the resulting costs to be substantial. One need simply recognize that an individual's own interests are likely to have more salience to him or her than the interests of others. In dealing with any given group of patrons, an owner who is not among those patrons is likely to find it easier to aggregate their interests evenhandedly than one of the patrons themselves.

23. A striking example is the extreme difficulty in organizing multiple owners of drilling rights in a common oil pool to act collectively, even when the potential efficiency gains are very large and the number of owners is relatively small (Libecap and Wiggins).

Hoffman and Spitzer report results in which even groups with as many as nineteen persons experienced little difficulty in agreeing collectively to contract on efficient terms with an opposing individual or group. In these experiments, however, all of the individuals within a given group faced essentially identical payoffs; consequently, the results do not provide much insight into situations in which interests differ significantly among the individuals involved.

There are, to be sure, also some potential *advantages* to collective decision-making over market transactions. As Hirschman has pointed out, there are many circumstances in which voice can be more effective than exit as a method of communicating patron preferences to the management of a firm. The evidence suggests strongly, however, that collective decision-making is more costly than markets in this respect in cases of even modest heterogeneity of interest among the class of patrons in question. For example, there are very few large firms in which ownership is shared among more than one class of patrons, such as customers and suppliers, or investors and workers. The conspicuous exceptions—such as German codetermination—have generally been imposed by law, and they apparently do not involve much true sharing of control.[24]

Risk-bearing. The preceding discussion has focused on the costs associated with the first element of ownership: the exercise of control. But costs are also associated with the second element of ownership: the receipt of compensation in the form of residual earnings. Most conspicuous among these is the cost of bearing the risk of the enterprise and is typically reflected in residual earnings. One class of a firm's patrons may be in a much better position than others to bear such risk, for example, through diversification. Assigning ownership to those patrons can then bring important economies.

This is a familiar explanation for the prevalence of investor-owned firms. It is not true, however, that lenders of capital are the only low-cost risk-bearers. For example, consumers can also be in a good position to bear the risks of enterprise, particularly where the goods or services involved make up a small fraction of the consumers' budget or where the consumers are themselves firms that can pass the risk on to customers of their own who in turn are good risk-bearers.[25]

Another important consideration here, and one that has been little remarked upon, is that market contracting with a given class of patrons itself sometimes *creates* a substantial degree of risk that can be avoided by assigning ownership to those patrons. This is particularly likely to be the case where the patrons must enter into a long-term relationship with the firm, so that the terms of the contract between them become a gamble on future contingencies.

24. The German Codetermination Act of 1976 in essence gives shareholder representatives on the board of directors a casting vote in cases of impasse between labor and shareholder representatives (see Svejnar). It seems plausible that the most important efficiency advantage of codetermination lies simply in giving worker representatives access to inside information, and thus reducing the possibilities for strategic or opportunistic behavior by management toward workers (see Aoki: 167).

25. See the discussions below of wholesale and supply cooperatives and of property and liability insurance companies. See also note 40 on cooperative housing.

2.5. Applying the Calculus

Any assignment of ownership involves important trade-offs between the costs of market contracting and the costs of ownership. The efficient assignment of ownership, to repeat, is that which minimizes the sum of such costs among all the patrons of the firm.

In the discussion that follows I explore the particular costs of ownership and of market contracting that affect various classes of patrons in different industries, and I seek to explain the patterns of ownership in terms of those costs. Although the six categories of costs set out above do not comprehend all the transactional efficiency considerations relevant to ownership, they usefully organize those that appear most important. Sometimes, to be sure, public subsidies or legal constraints also influence organizational form, and these will be acknowledged where they seem important.[26] Other considerations—such as the "horizon problem"[27]—that have been emphasized by other authors but do not seem fundamental in determining which forms of ownership survive, will be discussed in the context of particular industries that illustrate the issues involved.

The simple analytic framework outlined here of course does not provide a precise calculus for determining the efficient assignment of ownership in any given industry. Rather, its principal object is simply to help in asking the right questions. More particularly, by viewing the prevailing ownership pattern in different industries with this framework in mind, we can gain a much stronger appreciation for the relative magnitudes of the various costs associated with both market contracting and ownership.

3. INVESTOR-OWNED FIRMS

Although many of the efficiencies of investor-owned firms are familiar, it is useful to review them in terms of the framework developed above.

3.1. Costs of Market Contracting

Because capital markets today are highly competitive, market power is rarely an incentive for lenders of capital to become owners of a firm to which they lend. Rather, problems of asymmetric information and lock-in provide the strongest incentive for assigning ownership to investors.

26. For efforts to determine empirically the relative efficiency of cooperative and investor-owned firms in industries that are not discussed in detail here, and in which cooperatives benefit from subsidies, see Hansmann (1988) and Porter and Scully. Note, however, that the latter authors seem to impute to cooperatives in general some organizational characteristics that may be induced by the tax laws.

27. See note 50.

In theory a firm could borrow one hundred percent of the capital it needs with the owners of the firm—whether they are another class of the firm's patrons or third parties who do not otherwise transact with the firm—investing no capital themselves. And if, in practice, the owners could be constrained by the terms of the loan contract to devote the borrowed funds only to the most efficient projects and to take for themselves only a specified rate of compensation until the loan had been repaid, this approach would be workable. But it is extremely difficult to write and enforce such a contract. And without such contractual terms, the owners have an incentive to behave opportunistically, distributing to themselves dividends (or perquisites) that are unjustified by the firm's earnings or (what is harder to police) investing the proceeds of the loan in high-risk projects whose gains will go disproportionately to the owners and whose losses will fall disproportionately on the lenders.[28]

The incentives of the owners to behave this way can be effectively curbed if they are made to post a bond for the full amount of the loan. If the proceeds of the loan are invested in assets that are not organization-specific, this can be easily accomplished by giving the lenders either a lien on those assets or outright ownership of the assets (so that the loan becomes one in kind, that is, the assets are rented). Yet, as others have recognized, where the loan proceeds are in some part invested in organization-specific assets—and this usually will be the case—the problem is more difficult.[29] A possible solution is to have the owners provide personal security for the loan by pledging personal assets or future income as collateral.[30] This is, in fact, a common procedure, particularly in small firms. Where large-scale enterprise is involved, however, and the ownership class is numerous, this device is quite cumbersome. It is difficult for a lender to check the value of the numerous pledges of security, and it is expensive to foreclose on a large class of small guarantors in case of default.[31]

28. This problem has been well recognized in the context of determining debt/equity ratios for investor-owned firms (Jensen and Meckling, 1976).

29. Klein, Crawford, and Alchian seem to have been the first to note clearly that problems of opportunistic expropriation of firm-specific assets are an important reason "why the owners of the firm (the residual claimants) are generally also the major capitalists of the firm" (321).

30. In a sense, such pledges of security in themselves make the owners investors in the firm. But it is not quite the same thing. Assets pledged as security, unlike assets actually invested in the firm, can be productively invested elsewhere. This permits an individual to use a given stock of capital to obtain ownership interests in a larger number of firms than would otherwise be possible (which is useful for risk diversification purposes) or alternatively to obtain a larger ownership share in each of a given number of firms (which is useful for purposes of exercising more effective control over each firm).

31. This is not to say the device is not used. English corporation law, for example, makes provision for corporations limited by guarantee rather than by shares. In such corporations the members' liability is limited by the amount of their guarantees, not by the amount they have invested, which might be nothing (Morse). Similarly, in the early days of the American banking industry, state law sometimes made the shareholders of a bank liable to the bank's creditors for an amount equal to twice the shareholder's investment in the firm. The shareholder thus would be personally liable for a sum equal to the amount he or she had invested in the firm, in addition to running the risk of losing that investment (Rasmussen).

These problems of asymmetric information are substantially magnified by lock-in. If lenders could withdraw their investments from the firm at will, there would be a substantial check on the possibilities for managerial opportunism. But firms typically must undertake long-term investments, and these require long-term financing. Short-term borrowing not only involves the transaction costs of continuous refinancing but, more importantly, threatens inefficient runs on the firm's assets by its creditors. As a consequence, the costs of managerial opportunism can often be significantly reduced only by having the lenders themselves, or some subset of them, own the firm.

3.2. Costs of Ownership

Diversification of risk is a conspicuous advantage of investor ownership. Another great strength of investor-owned firms is the fact that the owners generally share a single, well-defined objective: to maximize the net present value of the firm's earnings per dollar invested. To be sure, differences in tax status or risk preference may lead investors to differ about the most appropriate financial policy for the firm. But even these differences can be eliminated to some extent if investors sort themselves among firms (DeAngelo).

The great liability of investor-owned firms, on the other hand, is that investors frequently are in a poor position to engage in meaningful supervision of the firm's management—particularly where, in order to obtain access to a large pool of capital and to diversify risk, the firm's capital is drawn from a numerous group of relatively small investors. It is commonly argued that the market for corporate control—more precisely, the threat of takeover by a concentrated group of large investors who are in a position to act effectively—is an effective surrogate for the direct exercise of oversight and control by the firm's current owners in keeping corporate management in line. But regardless of whether this view has some validity as a description of current reality (see Jensen and Ruback), the existence of the market for corporate control seems both inadequate and unnecessary to explain the great success of large business corporations with broadly dispersed share ownership. The market for corporate control has been highly active only for the past decade or two. Before then, hostile takeovers were rare, possibly because the managerial, financial, and legal innovations necessary to effect them were not well developed (Williamson, 1986: 321). Yet widely held business corporations have been commonplace for the past century.

We might, therefore, draw another conclusion from the success of such corporations: direct exercise of oversight and control by owners is not of decisive importance for the efficient conduct of enterprise; it is often worth trading off in favor of the other cost factors outlined above.[32] Under this view,

32. This is arguably supported by the findings of Demsetz and Lehn, who report no empirical correlation between ownership concentration and profitability of investor-owned firms.

much of the protection that the investors in a widely held investor-owned firm have from opportunistic behavior on the part of the firm derives simply from the absence of a class of owners with interests contrary to theirs.[33] But, as suggested earlier, this may be important protection and worth the costs of some managerial slack.

4. CUSTOMER-OWNED RETAIL, WHOLESALE, AND SUPPLY FIRMS

4.1. Retailers of Consumer Goods

In the popular mind, customer-owned firms are commonly exemplified by retail stores organized as consumer cooperatives. Yet consumer cooperatives have an almost negligible share of the market for nearly all ordinary retail items, amounting to only 0.25 percent of the overall consumer goods market (Heflebower: 4).

The small market share held by retail cooperatives is understandable in terms of the cost considerations outlined above. The costs of customer ownership for many consumer goods and services are high: the customers of any given retail firm are commonly so numerous, transitory, and dispersed that organizing them effectively would be excessively difficult. And for those goods for which the costs of customer ownership might be manageable—for example, for such items as food and clothing that comprise a significant share of consumer budgets—the costs of market contracting are typically low: retail markets for such items are sufficiently competitive to keep prices close to cost, and the goods and services themselves are sufficiently simple or standardized, or are purchased so repetitively, that asymmetric information about quality is not a serious problem.

The single retail market in which consumer cooperatives have established a significant market share is the market for books, where cooperatives account for nearly ten percent of all sales (Heflebower: 124). This large market share evidently reflects the prevalence of cooperative book stores on university campuses, where a significant fraction of the nation's books are sold. The principal incentive for adopting the cooperative form here is apparently market power; there is usually room for only one important seller of textbooks on a campus, presumably because of the substantial economies in having a single organization assemble information about the texts to be assigned for courses and the projected class enrollments. The costs of ownership are also favorable: the amounts spent on books are a significant fraction of a student's

33. In investor-owned firms the problem of managerial opportunism may also be mitigated by the fact that, when it comes to investment policy, there is good reason to believe that—contrary to the behavior to be expected of owners who are not investors—the managers will be too conservative rather than too speculative, since their own human capital is on the line if the firm goes bankrupt (see, for example, Amihud and Lev).

budget, students typically continue to patronize the same store for four years or so, student demand is relatively homogeneous, and students can be easily organized through their common affiliation with the university.

4.2. Wholesale and Supply Firms

Although consumer-owned retail stores are rare, wholesale and supply firms that are owned by the retailers or other businesses to which they sell are common. For example, whereas consumer cooperatives constitute less than half of one percent of the retail market for groceries (Heflebower: 4), retailer-owned wholesale cooperatives in 1985 accounted for 14 percent of all groceries distributed at the wholesale level and 31 percent of the market if we exclude internal distribution within chains having integrated wholesale and retail operations (Progressive Grocer). Retailer-owned wholesale cooperatives are even more important in hardware, where they make up 50 percent of the market (Hardware Age). A substantial share of the nation's bakeries obtain their baking supplies from firms that they own as cooperatives (Heflebower: 114–15). And the largest international news service, Associated Press, is owned cooperatively by the thousands of newspapers and broadcasting stations it serves.

Costs of Market Contracting. Market power appears to provide the principal incentive for customer ownership in many of these cases. The grocery business, for example, is highly competitive at the retail level. If independent stores are to compete with the large chains, which maintain their own wholesale distribution systems, they cannot afford to pay pure profits to a wholesaler. Yet economies of scale at the wholesale level generally leave room for at most a few firms to serve the independent retailers in a given area, so the wholesalers have a degree of market power. Consequently, there is an incentive for retailers to avoid price exploitation by owning the wholesaler that serves them. The Associated Press is another obvious example. Economies of scale have led to a market occupied by only two substantial news services in the United States, United Press International and Associated Press, the former investor-owned and the latter a cooperative.

Another source of the market power that provides the impetus for customer ownership derives from the use of a common brand name for marketing purposes. Retailers can achieve considerable economies in packaging and advertising through collective use of single logo or insignia by which their stores and products are identified. For example, most members of the largest bakery supply cooperative market bread under the common name "Sunbeam." Similarly, independent hardware stores belonging to the same wholesale cooperative generally use a common store name and insignia as well as market products that bear that name; True Value and Ace Hardware are familiar examples (see Cory).

Of course, economies from use of a common brand name do not in themselves make cooperative ownership of the wholesaler possessing that brand name efficient. An investor-owned wholesaler could also license a brand name to the retailers purchasing their supplies from it, as in the typical franchise arrangement, and this form of organization is in fact common in wholesaling.[34] But there is a lock-in problem, since the retailer can incur substantial costs from loss of the local goodwill it has built up if it changes its brand name affiliation.[35] Collective ownership of the franchiser by the retailers obviates this difficulty.[36]

Costs of Ownership. Costs of ownership are also strongly conducive to customer ownership here. A retail grocery or hardware store, for example, generally purchases a significant fraction of its goods from a single wholesaler with which it transacts continuously for years. Thus the store is in a position to oversee the affairs of the wholesaler without incurring substantial costs beyond those it would incur under market contracting. Moreover, the supply business does not require large amounts of organization-specific capital: warehouses are general-purpose structures, and inventory can usually be liquidated without substantial losses.

Consequently, risk-bearing and liquidity constraints are not an important obstacle to customer ownership. Finally, since retail hardware stores, or grocery stores, generally stock similar arrays of merchandise, their interests with respect to the wholesaler are reasonably homogeneous.

4.3. Farm Supplies

Farm supply cooperatives are a particularly prominent form of customer-owned supply firm. In 1984 there were roughly 2,200 such firms, which together accounted for 27 percent of the overall market for farm supplies—up from 23 percent a decade earlier. The cooperatives are particularly important in supplying petroleum products (41 percent of the market), fertilizer

34. IGA is an example in the grocery business. Interestingly IGA is itself a *wholesaler's* cooperative owned by its twenty-two affiliated wholesalers (Tanner).

35. The economies of a common brand name presumably also help to explain the substantial economies of scale for wholesalers and the consequent small number of competitors.

36. It is interesting to ask why some franchisers are owned by their franchisees and others, such as the fast-food chains, are not. Certainly lock-in is much greater in fast-food retailing than in hardware or groceries, since in the former the physical facilities are highly specialized. One explanation may be that expulsion of franchisees is more easily accomplished by a franchiser that is investor-owned than by one that is franchisee-owned. Consequently, in businesses in which the franchisees are in a position to impose substantial damage on the chain as a whole by cutting quality locally while freeriding on the brand name, the cooperative form may be handicapped by its inability to discipline members effectively through threat of expulsion. Service industries such as fast foods, where much of the product preparation is done at the franchisee level, are presumably more subject to this problem than retailers, such as hardware and grocery stores, that sell brand-name products involving little or no local preparation.

(38 percent), farm chemicals, such as pesticides (29 percent), and feed (18 percent) (U.S. Department of Agriculture, 1985a: 11).

Most farm supply cooperatives serve only a local area of one or several counties, and they are controlled directly by their farmer-members. Often these local cooperatives are federated into much larger regional cooperatives that have the local cooperatives as members and supply many of the goods sold by the local cooperatives. The regional cooperatives, in turn, are sometimes federated into national cooperatives that manufacture or wholesale major lines of supplies. The regional and national cooperatives are often quite large; a number of them appear among the Fortune 500 listing of the largest U.S. industrial corporations.[37]

Costs of Contracting. As with the other types of wholesale and supply cooperatives just discussed, market power evidently has provided an important incentive for customer ownership in the farm supply business. When cooperatives first established a significant market share in most lines of farm supplies—primarily during the two decades immediately following World War I—the markets involved were apparently not highly competitive. Investor-owned firms in the fertilizer industry, for example, were repeatedly the subject of investigation and prosecution for restrictive agreements concerning prices and sales territories. Petroleum supply cooperatives achieved their most important growth in areas of the country, such as the midwest, which were removed from the areas of oil production and where distribution was dominated by several large companies that avoided price competition in favor of service and advertising competition and that had a monopoly on low-cost means of transportation (chiefly pipelines). Cooperatives achieved little market share in those regions, such as the southwest, that were characterized by surplus production and consequent stiff competition among producers and refiners (Heflebower: chs. 6, 8). Also, on account of the low density of farm communities, there is apparently little room for competition among local distributors, thus giving such firms substantial market power locally as well.[38]

37. Some cooperatives that provide farm supplies also market the crops grown by their farmer-members, although this function is commonly performed by marketing cooperatives that are separately organized for that purpose. For reasons of space, I shall be concerned here only with supply cooperatives or with the supply operations of cooperatives that perform both functions. Much of what is said here about the efficiency properties of farm supply cooperatives extends to farm marketing cooperatives as well, however. Agricultural marketing cooperatives benefit from exemption from the antitrust laws and seem often to be formed primarily to achieve market power (Heflebower: chs. 4 & 5). Consequently, they provide a more ambiguous test of the efficiency of alternative organizational forms than farm supply cooperatives. Porter and Scully present empirical evidence that farm marketing cooperatives are less efficient than their investor-owned counterparts (though interpretation of their results is complicated by, among other things, the fact that the cooperatives in their sample may be a response to, or an effort to establish, monopoly power, and thus typically operate in different market settings—perhaps with less competition and less opportunity to exploit economies of scale—than the investor-owned firms in their sample).

38. Substantial local economies of scale need not in themselves yield market power if entry

In addition, and in contrast to the other types of wholesale and supply cooperatives considered here, asymmetric information seems to have been an important factor in the development of some types of farm supply cooperatives. In the early decades of the century, for example, when commercial livestock feeds were first coming into use, the ingredients of these feeds were largely unknown to the buyers and the quality was generally low. The same was true of commercial fertilizers. As a result, the cooperatives had an advantage in gaining the farmers' trust in their products. It is not clear, however, how long this advantage lasted or how important it was; regulation and increasing consumer sophistication seem eventually to have removed the worst problems of this sort (Heflebower: 78–79, 81).

Costs of Ownership. Costs of ownership are highly favorable to farmer-owned agricultural supply cooperatives. Each of the commodities in which farm supply cooperatives have a significant market share regularly constitutes a substantial fraction of a farmer's budget. A farm is likely to be in business and hence in a position to continue to patronize the same supplier for decades or even generations. And farms of a given type, which have similar demands for supplies, tend to be clustered geographically; consequently, they can easily be organized to exercise effective oversight of a local cooperative supply firm. Federation of the local cooperatives, whose activities are largely confined to distribution, in turn permits large-scale wholesale and manufacturing operations to be carried on while maintaining workable customer control.

Homogeneity of interest is assured by the fact that the cooperatives largely confine themselves to relatively simple, homogeneous commodities. The fact that petroleum is the commodity for which cooperatives have the largest market share is noteworthy in this respect. To be sure, a given supply cooperative often handles more than one commodity, apparently to capture economies of scope. Patronage refunds are often computed separately for each different product line, however.[39] Evidently this is done—at some accounting expense, and with a loss in risk diversification—precisely because it reduces conflicts of interest among members.

Problems Associated with Capital. Farm supply cooperatives in many areas have integrated upstream into manufacturing, and these operations

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is easy. The particular products in which farm supply cooperatives have a substantial market share (petroleum, feed, fertilizer, and chemicals) may, however, require capital investments in storage and mixing facilities that are not easily liquidated and that therefore reduce the contestability of local markets. The general absence of cooperatives among farm machinery distributors is perhaps explained in part by lower requirements for firm-specific investments in that business (but see the discussion of farm machinery below).

39. For example, Land O' Lakes, the large midwestern dairy farmers' cooperative, has refined its patronage refund accounting to the point where it computes a separate rate of refund for each of its six different types of fertilizer. (Telephone interview with Terry Nagle, director of communications, Land O' Lakes, July 17, 1986.)

sometimes require substantial capital. For example, as of 1969 farm petroleum cooperatives owned, singly or jointly, refineries that provided roughly half their supplies, oil wells that produced close to 90 percent of the refineries' crude oil input, and pipelines that transported most of the oil from the cooperatives' wells to their refineries (Heflebower: ch. 7). Similarly, farm supply cooperatives have integrated upstream into the manufacture of fertilizer, feed, seed, and agricultural chemicals.

In discussing investor-owned firms I noted that there are strong transaction-cost reasons for having the owners of the firm supply a substantial fraction of the capital needed to finance firm-specific assets. Where, as in a cooperative, the owners are patrons whose principal transactional relationship with the firm is something other than lending capital, providing this capital can lead to several difficulties. Farm supply cooperatives illustrate these difficulties as well as the strengths and limitations of the capital financing devices available to deal with them.

LIQUIDITY AND RISK-BEARING. To begin with, if the required capital investment is a large fraction of the patrons' wealth, the resulting poor diversification will lead to costly risk-bearing. Further, investing in a firm that one also patronizes in another capacity can itself increase risk. The returns to investments in farming and farm supplies, for example, are likely to be highly correlated.[40] Finally, liquidity problems can prevent the patrons from providing the necessary capital regardless of risk.

CONFLICT OF INTEREST. Moreover, when the owners of a cooperative also have a substantial capital investment in the firm, a particular form of heterogeneity of interest arises. Residual earnings in such a firm must be divided between patronage dividends and returns to invested capital. Any such allocation is necessarily somewhat arbitrary. This is of no consequence if all consumers who are entitled to patronage refunds also own capital shares in direct proportion to the amount of their patronage. In the absence of such proportionality, however, allocation rules will have different consequences for different patrons. Then the problems associated with divergent interests may arise.

The importance of this issue is evidenced by the fact that many of the larger and more capital-intensive farm supply cooperatives have adopted some scheme for keeping members' capital investments—which generally derive largely from retained earnings—aligned with their levels of patronage.[41] The most common method is just to redeem all equity investments

40. In some types of cooperatives the reverse is the case, however. For example, elderly persons on fixed incomes can hedge against inflation by owning the supplier of their housing, and this is evidently a substantial source of the demand for condominium and cooperative apartments.

41. Another reason for keeping patronage and capital investment in line with each other is that farm supply cooperatives typically pay no dividends on equity, and they generally redeem equity at book or net value, whichever is lower; thus the only return that members receive on

after a given number of years has passed. The most sophisticated methods involve annual adjustments to the rate at which earnings are retained and the rate at which equity is redeemed for each individual member in order to maintain equiproportionality for all members between invested capital and average level of patronage for the several years immediately preceding (Brown and Volkin: 5, 8).

All such schemes involve tension among the amount of capital that can be accumulated per member, the speed with which capital can be accumulated, and the degree to which each member's invested capital is kept proportional to patronage. That tension is least where patrons remain members of the cooperative over long periods of time and where the level of patronage remains fairly constant for most members. These conditions are reasonably well met in the farm supply business, undoubtedly contributing significantly to the viability of capital-intensive consumer cooperatives there.

Costs of Contracting versus Costs of Ownership. The large market share obtained by customer-owned enterprise in wholesale and supply industries provides an important perspective on the relative significance of the different cost factors outlined earlier.

What is most striking about these industries is that the degree of product market failure that evidently has provided the impetus for customer ownership, appears relatively small. Many other industries presumably exhibit similar degrees of imperfection in their product markets. The distinguishing feature that has led to widespread development of customer ownership in the industries at hand, rather, seems to be that the costs of customer ownership are uncommonly low. Evidently even modest degrees of product market imperfection make it efficient to abandon investor ownership in favor of customer ownership where the customers are in a good position to exercise effective control. To be sure, farm cooperatives have the benefit of favorable tax treatment, and this has presumably contributed to the cooperatives' market share. But farm cooperatives antedate these tax preferences, and the same preferences do not extend to the many wholesale and supply cooperatives found outside the agricultural sector.[42]

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their investment in the firm comes in the form of lower net (after-dividend) prices (Comptroller General of the United States, 39; Cobia et al.: 11).

There seem to be no tax incentives for not paying dividends on capital stock in farm cooperatives; see note 39. Perhaps, instead, the practice has been adopted to create, in effect, a two-part pricing scheme that permits supplies to be sold at per-unit prices that approximate marginal cost.

42. Non-farm wholesale and supply cooperatives benefit from no subsidies or other special privileges other than the right to be taxed according to Subchapter T of the Internal Revenue Code, which essentially applies to them a single tax—rather than the overlapping corporate and personal income taxes—somewhat along the lines of the tax treatment accorded partnerships and Subchapter S corporations. Since Subchapter T is available to producer and consumer cooperatives in all industries, it should not directly affect the distribution of those forms across industries.

Farm marketing and supply cooperatives have the further benefit of exemption from the

Further evidence concerning the trade-off between market failure and cost of control comes from the farm machinery business. Market failure, in terms of both market power and asymmetric information, seems much more severe in farm machinery than in the commodities typically handled by farm supply cooperatives. And farm machinery accounts for a significant portion of farm budgets.[43] Nevertheless, cooperatives play a minimal role in marketing or manufacturing farm machinery. One reason for this may be the capital intensity of the business. Yet petroleum is also a capital-intensive business, and this has not prevented cooperatives from occupying a third of the farm market.[44] More likely, a critical factor in the farm machinery business is that the cost of customer control is much higher than in other farm supplies. In particular, the fact that farmers use a range of different types of equipment of different vintages makes for heterogeneity of interest; there may be room for substantial disagreements about such matters as the types of inventory to carry, the type of service facilities to maintain, and the type of financing to offer. Further, the sporadic nature of purchases makes it difficult for farmers to engage in continuous monitoring of producers.[45]

5. WORKER-OWNED FIRMS

Worker-owned firms are the dominant form of organization in the service professions, such as law, accounting, investment banking, and management consulting. They are also relatively common in some other service industries, such as taxicabs and trash collection (Russell, 1985b). Outside the service sector, on the other hand, worker-owned firms are generally isolated and often short-lived entities, competing in industries in which investor-owned firms are clearly dominant. One of the few exceptions is plywood manufacturing; roughly two dozen plywood firms in the Pacific Northwest have long been operated, with considerable success, as labor cooperatives (Berman).

Much ink has been spilled in recent years on the subject of worker-owned

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corporate-level tax on stock dividends and on certain forms of non-patronage income under I.R.C. sec. 521. Since, however, farm supply cooperatives rarely pay stock dividends (see note 41) it is not clear that this is an important reason why cooperatives are unusually prominent in this industry.

43. In 1985 farmers spent $9.5 billion on farm machinery. By comparison, in the same year they spent $24 billion for feed and seed, $13.6 billion for petroleum products and machine maintenance (separate figures are not available here), and $8.9 billion for fertilizer and lime—all supplies in which cooperatives have a large market share (U.S. Department of Agriculture, 1985b: 4).

44. Moreover, farm supply cooperatives are presumably free to enter the machinery business the same way they did the petroleum business—by beginning at the retail distribution stage, which does not require much organization-specific capital, and then integrating upstream only after establishing themselves at that level. And upstream integration need not involve instantly creating a full-line competitor to the John Deere Company. Rather, it could begin with the manufacture of parts and accessories and only gradually, as experience and capital is accumulated, advance to the production of such items as tractors and combines.

45. See also, however, the considerations in note 38.

enterprise (for surveys see Ben-Ner; Pryor). Nevertheless, a convincing explanation for the existing pattern of worker ownership has not been offered. That pattern, and the strengths and weaknesses of worker ownership in general, become more understandable when viewed in terms of the framework outlined in Section 2.

5.1. Costs of Contracting

Few firms have labor market power in the service industries in which worker-owned firms are common. On the other hand, in many labor markets there is some degree of lock-in; after an individual has worked for a particular firm for a prolonged period of time, his or her skills are often specialized to that firm. Moreover, workers and their families often develop nonfungible personal ties to the community in which their workplace is located, thus exacerbating the lock-in problem. This problem may be a substantial cost of labor contracting in many industries, and the potential for its elimination presumably provides an important incentive for worker ownership in general. But in itself it fails to explain the existing pattern of worker ownership since, as workers go, service professionals—and even more so taxi drivers, refuse collectors, and the semi-skilled workers in the plywood cooperatives—are relatively mobile.

The third of the basic costs of market contracting, asymmetric information, could also provide an incentive for worker ownership. In this case, however, the information disadvantage runs in the opposite direction from the cases we have analyzed above: the principal problem is not that the individual patron cannot police the firm's behavior,[46] but rather the reverse.[47] Where, as in the service professions, the employees are performing complex and highly skilled work that requires substantial autonomy and discretion, effective monitoring of employees may be difficult. Consequently, there is an incentive to integrate vertically to eliminate conflicts of interest between the firm and its workers and thus give the workers stronger incentives for productivity. And, since the firm cannot own the workers, the workers must own the firm.

An argument along these lines has been made before to explain the existence of worker-owned firms—most notably by Alchian and Demsetz (see

46. This is not to say that such problems do not exist. Indeed, as suggested in note 24, they may provide the best rationale for worker codetermination. As the codetermination example suggests, however, even minority worker representation on the board may be sufficient to eliminate the worst forms of opportunism from this source.

47. Property and liability insurance is another industry in which patron ownership may have arisen in part as a response to problems the firm has policing the patrons rather than vice-versa. See note 59.

also Jensen and Meckling, 1979; Russell, 1985a). Among other difficulties,[48] however, this theory is contradicted by the fact that workers appear much *less* difficult to monitor in those industries in which worker ownership is common than in other industries. Law firms, for example, routinely keep detailed accounts of each lawyer's individual productivity in terms of revenue to the firm—something that would be impossible for workers in most other types of firms (McChesney).[49]

In sum, there are probably substantial costs associated with labor contracting in nearly all industries, and these costs provide an incentive for worker ownership. Such costs seem unusually *low*, however, in industries where worker ownership is common. We must turn, therefore, to the costs of ownership to find an explanation for the existing pattern of worker ownership.

5.2. Costs of Ownership

Workers in nearly all industries are in a very good position, in comparison with other classes of patrons, to monitor the management of the firm. The majority of their income typically comes from their work relationship with the firm; they are in daily contact with the firm's operations and are knowledgeable about some aspects of them; and they are easily organized for collective decision-making. This is not to imply, of course, that the typical shop-floor worker necessarily knows much about the firm's marketing problems or capital investment program. Yet his or her opportunity and incentive to gain and use such information (or to locate, elect, and hold accountable representatives who will) is generally stronger than that of, say, the firm's customers or remote investors.

On the other hand, costs of risk-bearing are often unfavorable to worker ownership. This is obviously true for firms with substantial amounts of firm-specific capital. For reasons previously discussed, worker-owners in such firms will face high costs of capital if they do not provide a significant fraction of this capital themselves. Yet investing heavily in the firm for which they work will cause their human capital and their savings, taken together, to be very poorly diversified—a problem of worker ownership that has frequently been noted (Meade; Jensen and Meckling, 1979). It is not surprising, then,

48. In particular, where ownership of the firm is shared by a substantial number of workers, much of the incentive for opportunism would seem to remain: the individual worker will bear only a small fraction of the losses that the firm suffers from his or her shirking. On the other hand, the available evidence suggests that workers in worker-owned firms do not succumb much to this incentive to free ride and that worker ownership in fact has generally good consequences for productivity (see, for example, Berman: ch. 12). This may be because mutual monitoring is fairly intense and effective under worker ownership or because workers commonly respond more to the symbolism of ownership than to the actual incentives it creates.

49. McChesney's own alternative hypothesis, that worker ownership provides a means for rewarding the promotional efforts of a firm's workers, is also unpersuasive.

that those industries in which such firms are best established, such as law and accounting, are characterized by low amounts of organization-specific capital per worker.[50] Yet there are many service industries, such as retailing and the construction trades, that are highly labor-intensive but are nevertheless populated largely with investor-owned firms.

To be sure, risk-bearing might also appear to be a comparative liability for worker-managed firms even in labor-intensive industry. Since workers generally cannot diversify their source of income by working for more than one firm at a time, it would seem advantageous to have the firm owned by investors, who would provide workers with job security and a contractually fixed wage.[51] But, presumably because of the difficulty of writing workable long-term employment contracts, workers in fact generally bear substantial risk in the form of layoffs even in investor-owned firms.[52] Consequently, the risk-bearing features of worker ownership seem unlikely to account for its rarity.

Rather, the truly striking feature that seems common to virtually all well-established worker-owned firms, and that seems most clearly to divide these firms from those that are investor-owned, is the strong homogeneity of interest among the workers involved. In particular, what seems important is homogeneity of jobs and of skills: labor cooperatives appear to work best where all the workers who are also members of the cooperative perform essentially identical tasks within the firm.

50. Jensen and Meckling (1979; see also Furubotn, 1976) argue that a major inefficiency of worker-managed firms lies in what they term "the horizon problem." By this they mean that when workers leave the firm they lose their share of the value of any capital that has been accumulated by the firm and thus have insufficient incentive to invest in projects with long payback periods. Their analysis is confused by their assumption that it is, for unstated reasons, commonly impossible to arrange for the cooperators to redeem their equity share in the firm upon leaving or to sell it to a new worker. In fact, schemes of the latter sort are not only feasible but frequently employed; in the Pacific coast plywood cooperatives, for example, departing workers sell their position in the firm to new workers at fair market value (Berman). (Fama and Jensen themselves recognize such schemes in the context of partnerships of professionals.) Indeed, what is most interesting is that cooperatives do not employ such schemes more extensively even where they are clearly practicable. Thus, as observed in note 41, farm supply cooperatives, which are relatively capital-intensive, typically redeem capital investments only at book value. The absence of more generous redemption plans suggests that, even without them, the horizon problem may not in fact be particularly important in firms in which membership commonly extends over many years.

In any event, there is no horizon problem that is unique to non-investor-owned firms. Any type of cooperative, including the lenders' cooperatives we call business corporations, can be designed with or without a complete set of claims to the net value of the firm that are freely tradable (and that are tied to the particular type of patronage that characterizes ownership in the type of firm in question, whether it be lending to, selling to, or purchasing from the firm).

Much the same can be said of the "common-property problem" described by Jensen and Meckling (1979), which involves the closely related phenomenon of transfer of capital value from existing workers to newly hired workers, and the consequent disincentive for the existing workers to expand employment efficiently if the new workers are not required to purchase shares upon joining the firm.

51. As emphasized in the implicit contracts literature; see Rosen.

52. Unionization may also be a factor here; see Medoff.

Evidence for the importance of job homogeneity is impressive. For example, the partners in law firms all have similar skills and perform similar tasks. For the most part, the partners handle clients on their own or in small groups; there is relatively little vertical division of labor or hierarchy among the partners in the firm. Further, the trial periods of roughly six years that young lawyers serve before being considered for partnership permits the existing partners to select others to join them who are of like ability—and like temperament, for that matter. And much the same is true of other types of professional partnerships.

It is, in fact, striking that many large and highly successful law firms follow a practice of dividing income among partners strictly on the basis of number of years with the firm: all partners of a given length of tenure receive the same share (Gilson and Mnookin). Such a practice presumably is adopted, at considerable cost in terms of financial incentives, in large part because it substantially reduces the costs of decision-making.[53] It is possible, however, only in a firm in which all owners make roughly equal contributions.

Similarly, the plywood cooperatives typically follow a rigid principle of equal pay for all worker-owners. The manager of the firm often is not a member of the cooperative, but rather is hired by the worker-owners. Worker-owners are generally capable of undertaking any job in the plant other than that of manager, since only semi-skilled labor is involved. Job assignments are made according to a bid system, with more senior workers generally given preference, and there is much rotation among jobs (Berman). Such a system reinforces the equal pay rule and reduces conflicts of interest among workers: where all workers do, or will ultimately do, the same jobs, they will be affected similarly by any decision made by the firm.[54]

To the extent that workers in worker-owned firms perform different jobs, it seems important to the viability of the firm that the returns to those jobs be separable. The reason, apparently, is that this permits a differential division of the firm's earnings with a minimum of friction. Thus some partners in law firms work longer hours, have greater skills, or bring in more new clients than others. Where such disparities are substantial, law firms sometimes use productivity-based formulas for dividing up earnings. Such formulas are feasible only where the returns to an individual worker's efforts are fairly easily observable, as they are in a law firm, in which such productivity measures as hours billed to individual clients are available. By contrast, it is hard to imagine how one would even design a productivity-based com-

53. Such sharing rules may also serve a risk-sharing function (Gilson and Mnookin), although it is hard to believe that this is their primary role.

54. Egged, the large Israeli bus monopoly, is yet another example. It is a workers' cooperative in which the bus drivers, and only the bus drivers, are the owners. The administrators, ticket agents, interpreters, and mechanics are all just employees. Again, the reason is presumably that, whereas it is easy to secure consensus among just the bus drivers, it would be much harder to secure consensus among the bus drivers, the interpreters, and the ticket agents.

pensation formula for managers in most large business corporations, much less reach agreement on the terms of the formula among the different managers themselves.

Such considerations of homogeneity of interest are evidently an important reason why worker-owned firms appear, as remarked above, not where worker productivity is particularly difficult to monitor, but on the contrary in those industries in which worker output seems relatively easy to measure. Thus trash-collection crews, taxicab drivers, and service professionals are likely to form worker-owned firms, and not blue-collar or white-collar workers who work in large teams. It is, in fact, extremely difficult to find successful examples of worker-owned firms in which there is substantial hierarchy or division of labor among the worker-owners.

Indeed, worker-owned firms in the service professions, where they are most commonly found, are in many ways analogous to the wholesale supply cooperatives examined above. The partners in such firms are to a considerable degree autonomous workers, servicing their own clients. In many cases they could do nearly as well practicing on their own, or in much smaller groups, affiliating in various combinations only when necessary to deal with large or complex matters. This very separability in their services, which makes their individual contribution to the firm relatively easy to monitor, is what makes the incentive pay system that accompanies worker ownership so effective; it is possible to assign to each worker roughly that portion of the firm's earnings that he or she contributes thus giving the worker a strong incentive for maximum productivity.

Economies can be had, however, by sharing common services, such as a library, secretarial staff, receptionist, data processing, and record-keeping. These services sometimes are rented from a firm serving multiple firms of professionals located in the same building. But there is at least some incentive for the professionals to own the provider of these common services collectively so as to avoid the problem of lock-in and subsequent exploitation. Moreover, the professionals may find it efficient to advertise collectively, as it were, by adopting a common brand (firm) name. And, as in the case of the wholesale cooperatives that provide common brand names to their member retailers, there is some incentive to own the brand name collectively in order to deal with the additional lock-in problem that it creates. It follows that worker-owned firms such as these can, alternatively, be viewed as consumer cooperatives rather than as producer cooperatives: in a sense, they are groups of independent firms that collectively purchase some common services.[55]

55. Oil pipelines are sometimes owned collectively by the owners of the oil wells they serve. The primary incentive for this, as has been pointed out by Klein, Crawford, and Alchian (310–11), is presumably lock-in: once the pipeline and oil wells are in place, the owner of the pipeline is in a position to expropriate quasi-rents from the well owners (or vice-versa). Note, in addition, that the costs of collective ownership for the well owners are markedly low here owing, among

6. UTILITIES

Approximately 50 percent of electric power consumed in rural areas is distributed by consumer cooperatives (Heflebower: 151). This development is easily understandable in terms of the cost considerations discussed in Section 2. Cooperative ownership allows customers to avoid both the costs of monopoly and the costs of rate regulation.[56] Furthermore, the costs of ownership are quite favorable here, much as in the case of farm supply cooperatives, of which the rural utility cooperatives are essentially just another example. Only the capital intensity of the industry appears as a potential obstacle. But, while a utility's assets are highly firm-specific, the utility's monopoly position in the market and the dependability of the demand for electricity provide substantial assurance that a market for those assets (that is, for the firm as a whole) will continue to exist; consequently, debt financing is easily available.

To be sure, the great proliferation of rural electric cooperatives does not provide a completely unbiased test of the viability of the cooperative form, since these cooperatives benefit from federal interest subsidies and loan guarantees for their borrowed capital.[57] But these subsidies, though undoubtedly important, are evidently not critical; even before the federal programs were enacted there were forty-six rural electric cooperatives spread across thirteen states (National Rural Electric Cooperative Association: 26).

In fact, the more interesting question is not why there are so many rural electric cooperatives, but rather why there are virtually *no* electric utility cooperatives in urban areas. Why is cooperative ownership not, in urban areas, a viable alternative to cumbersome conventional rate-base regulation?[58] Surely it seems a more attractive alternative than, for example, the much-debated proposals for franchise bidding for utilities (see Williamson, 1986; ch. 13).

The answer seems to be that the costs of ownership are much less favorable

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other things, to their geographic concentration, the continuous character of their transactions with the pipeline, and the extreme homogeneity of those transactions across the well owners in a given field.

Interestingly, the oil refineries at the other end of the pipeline, which also are somewhat specialized to the pipeline (and vice-versa), sometimes share ownership of the pipeline with the well owners (ibid.). Such shared ownership is evidently feasible because both the well owners and the refiners have essentially the same simple interest in the pipeline: to minimize the cost of transportation per unit of (presumably highly homogeneous) oil.

56. Of the forty-six states in which rural electric cooperatives are located only eighteen regulate their rates, and ten of the latter states employ a streamlined procedure for cooperatives. (Telephone interview with David J. Hedberg, director of regulations and rate design, National Rural Utilities Cooperative Finance Corporation, March 24, 1987.)

57. Between 1945 and 1985, the difference between the interest rate on Rural Electrification Administration loans and the annual interest rate on marketable treasury issues averaged 2.31 percentage points (Rural Electrification Administration: 31).

58. In a sense, of course, municipally owned utilities can be seen as a form of consumer cooperative.

for electricity cooperatives in urban markets than in rural markets. For one thing, the higher transiency of urban customers presumably increases the transaction costs of establishing ownership and also increases the likelihood that capital values will be shifted among customer-owners. Further, and perhaps as or more important, the interests of urban electricity customers are presumably much less homogeneous than those of rural customers, many of whom are farmers. In urban areas some customers are residential, some commercial, and some industrial. Conflicts of interest among these groups could be substantial, and almost any voting scheme for the members of the cooperative—including, most obviously, one-customer-one-vote—could easily lead to a rate structure that would heavily subsidize one class of customers at the expense of another. Thus, even if an urban electric utility were established as a consumer cooperative some type of regulatory apparatus would probably still be needed for approving rates in order to prevent any one group of customers from capturing control and exploiting the others.

7. INSURANCE

Roughly half of the life insurance sold in the United States, and one quarter of the property and casualty insurance, is sold by mutual insurance companies—that is, by companies owned by their policyholders. The factors that have led to customer ownership in these industries have been explored in detail elsewhere (Hansmann, 1985; see also Mayers and Smith, 1981); consequently, they will be reviewed only briefly to illustrate further some of the cost considerations at issue here. For the sake of brevity, discussion in the text will be confined to life insurance.[59]

7.1. Costs of Contracting

In its early days, life insurance was characterized by severe problems of asymmetric information. The owners of a stock (investor-owned) insurance company had both the incentive and the opportunity to appropriate the policyholder's accumulated premiums by undercapitalizing the firm or by investing in highly risky ventures. Moreover, the insureds were effectively locked in for the life of the policy. In these circumstances, the mutual form significantly reduced the incentive for opportunism.

59. The property and liability insurance industry contrasts with life insurance in several respects. For one thing, market power, rather than asymmetric information, seems initially to have been the most important inducement to customer ownership. Also, the mutuals have sometimes had an advantage over stock companies in reducing moral hazard on the part of the insureds. And finally, customers have often exercised effective control over mutual companies in property and liability insurance. See Hansmann (1985).

7.2. Costs of Ownership

Life insurance is a striking instance of an industry in which considerations of risk-bearing are strongly in favor of customer rather than investor ownership. Life insurance contracts typically have a duration of decades and are written in terms of nominal dollars. Consequently, they involve a gamble on future interest rates and rates of inflation, and on the accuracy of the mortality tables (which were quite crude in the nineteenth century, when the industry began). Stock insurance companies must charge substantial premiums for bearing these risks, which are largely nondiversifiable. Yet "insurance" for these matters is of little value to the insureds. The mutual form eliminates these costs for policyholders since, through adjustment in patronage dividends according to experience, only diversifiable risk is insured for. In short, mutuals permit pooling without creating the costs of risks associated with long-term market contracts.[60]

Other costs of ownership are less favorable to the mutual form. In particular, the policyholders in most mutuals are so numerous and so geographically dispersed as to make the exercise of collective control prohibitively costly. Consequently, from the time the first mutuals were established in the 1840s, the management of nearly all mutual life insurance companies has been more or less self-appointing and free of any effective supervision by policyholders. Life insurance is thus a clear instance of an industry in which ownership has been assigned to a class of patrons in large part just to avoid the high costs of market contracting that those patrons would incur if ownership were assigned to anyone else. In this connection, it should be noted that there is no reason to believe that taxes or other subsidies have ever been significant in promoting customer ownership in this industry. On the contrary, as discussed below, public regulation primarily has enhanced the viability of *investor-owned* firms.

7.3. Current Evolution

It is open to question whether mutual companies continue to exhibit lower costs of contracting between firms and policyholders than stock companies in the life insurance industry. The worst problems of asymmetric information were removed in the late nineteenth century through state regulation of insurance companies' financial reserves and investment policies. In addition, the problem of risk-bearing in stock insurance companies seems much less troublesome today than it did in the last century, when actuarial tables were crude and the ability to forecast the economy and to diversify risk through

60. Similar considerations are operative in property and liability insurance. Thus, when the aggregate risk of loss for an industry as a whole becomes highly unpredictable—as it has recently in medical malpractice, for example, owing to uncertainty about the legal standards of liability that will prevail when claims are litigated—the comparative advantage of the mutual form grows.

the capital markets was more limited. Also, stock insurance companies have now taken to writing "participating" life insurance policies that mimic the risk-bearing characteristics of mutual companies.

Nevertheless, mutual life insurance companies have continued to occupy a sizable share of the market and are losing that market to stock companies only very gradually. One reason is presumably that capital is effectively locked into the mutual firms; the owners (policyholders), lacking effective control, have no means of withdrawing their share of net assets,[61] and the management has no incentive to liquidate a mutual firm short of resorting to the self-dealing transactions that are now discouraged by regulation. The persistence and growth of the mutuals also shows, however, that the costs of managerial slack and self-dealing resulting from the complete absence of effective owner control have not been of sufficient magnitude to impair seriously the ability of the mutuals to survive in the product market in competition with investor-owned firms.[62]

8. FIRMS WITHOUT OWNERS: NONPROFIT ENTERPRISE

Sometimes the conflicts between the costs of market contracting and the costs of ownership are so strong that there is no class of individuals to whom ownership of a firm can be assigned without severe inefficiencies. In such situations, nonprofit firms, which effectively have no owners, often evolve as an expedient.

More specifically, two circumstances are commonly conjoined in those situations in which nonprofit firms emerge. First, there is an extreme problem of asymmetric information between the firm and some class of its patrons—usually a significant group of the firm's customers. As a consequence, assigning ownership to anyone other than that class of patrons would create both the incentive and the opportunity for the patrons to be severely exploited. But, second, those same patrons are so situated that the costs to them of exercising effective control over the firm are unacceptably large relative to the value of their transactions with the firm. The solution is to

61. Fama and Jensen (1985) state that "the important differentiating characteristic of the residual claims of mutuals is that they are redeemable," (114) and argue that the resulting ability of the firms' residual claimants/customers to force piecemeal partial liquidations polices management and assures the efficiency of the form. With the exception of open-end mutual funds, however, the net asset value of residual claims on financial mutuals generally cannot be redeemed prior to liquidation of the entire firm. For example, the cash value of a policy from a mutual life insurance company is substantially less than the value of the accumulated premiums, not to mention the policyholder's pro rata share of the reserves of the entire firm. Moreover, in the early decades of the life insurance industry, when mutual insurance companies first arose and clearly dominated investor-owned firms, policies could not be redeemed at all (Hansmann, 1985). The customer-members of financial mutuals in general have no more ability to discipline management through exit than do the customers of comparable investor-owned firms.

62. Mayers and Smith (1986) present further evidence suggesting that mutual companies may be relatively efficient (though they ignore possible changes in relative efficiency over time).

create a firm without owners—or, more accurately, to create a firm whose managers hold it in trust for its patrons. In essence, the nonprofit form abandons any benefits of full ownership in favor of stricter fiduciary constraints on management.

Most commonly, the problems of asymmetric information that render market contracting inadequate to protect the interests of patrons arise because the firm's patrons are either purchasing services to be delivered to third parties (such as food for starving children in Africa), so that the patrons cannot actually observe the firm's performance, or contributing toward the purchase of a public good (such as public broadcasting), so that the patrons cannot observe the marginal increment to the service purchased by their individual payment. (In both these cases, we usually refer to the patrons as donors.) Sometimes, however, the development of nonprofit firms has been stimulated by the less obviously severe problems of asymmetric information involved in purchasing private goods or services for the patron's own consumption. Savings banking in the early nineteenth century is a particularly interesting example (Rasmussen; Hansmann, forthcoming). As is illustrated by this industry—which, in its early days, was populated by both nonprofit and customer-owned firms,[63] but not by investor-owned firms—the roles of customer-owned and nonprofit firms sometimes overlap.

Indeed, the distinction between a nonprofit firm on the one hand, and on the other hand a cooperative in which the members have no effective voice, is small.[64]

9. CONCLUSION

The preceding survey points to several reasons for the dominance of investor-owned firms in market economies. One is that contracting costs for capital are often relatively high as compared with contracting costs for other inputs—including labor—and for most products. A second reason is that, however poorly situated investors may be to exercise effective control, there is seldom any other group of patrons who are in a better position to assert control. Where either of these conditions fails, other forms of ownership arise. Thus, when there are serious imperfections in the firm's product or factor markets, the firm is often organized as a consumer or producer cooperative or as a nonprofit. Similarly, when some group of patrons other than suppliers of capital is in a good position to exercise collective control, consumer or producer cooperatives often arise even when the patrons in question

63. Mutual savings banks are nonprofits, while mutual savings and loan associations are consumer cooperatives. The two types of institutions dominated savings banking in the first half of the nineteenth century, the former in the northeast and the latter in the south and west.

64. For a more detailed study of the nonprofit sector from a transaction cost perspective similar to that developed here, including further observations on the respective roles of nonprofit and cooperative enterprise, see Hansmann (1980; 1987).

are faced with only modest problems of market failure. This suggests either that the effectiveness of the oversight exercised by shareholders—even with the assistance of the market for corporate control—is distinctly limited or that other factors may be more important in constraining managerial opportunism.

In determining whether the costs of ownership are manageable for a given class of patrons, homogeneity of interest appears to be an especially important consideration. In particular, it is evidently a significant factor in the widespread success of the modern investor-owned business corporation, and it may be among the best explanations for the relative paucity of worker-owned firms, which otherwise have some significant efficiency advantages.

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