# AGENCY PROBLEMS AND RESIDUAL CLAIMS*

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## I. INTRODUCTION

### *A. Organizational Survival*

SOCIAL and economic activities, such as religion, entertainment, education, research, and the production of other goods and services, are carried on by different types of organizations, for example, corporations, proprietorships, partnerships, mutuals, and nonprofits. Most goods and services can be produced by any form of organization, and there is competition among organizational forms for survival in any activity. Absent fiat, the form of organization that survives in an activity is the one that delivers the product demanded by customers at the lowest price while covering costs. This is the telling dimension on which the economic environment chooses among organizational forms.

An important factor in the survival of organizational forms is control of agency problems. Agency problems arise because contracts are not costlessly written and enforced. Agency costs include the costs of structuring, monitoring, and bonding a set of contracts among agents with conflicting interests, plus the residual loss incurred because the cost of full enforcement of contracts exceeds the benefits.[1] In this paper we explain the

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[1] This definition of agency costs first appears in Michael C. Jensen & William H. Meckling, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, 3 J. Financial Econ. 305 (1976).

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special features of the residual claims of different organizational forms as efficient approaches to controlling special agency problems. We analyze only private organizations. In related papers we examine other features of the contract structures of different organizational forms that contribute to their survival; in particular, (1) the control of agency problems in the class of organizations characterized by separation of "ownership" and "control," and (2) the effects of special characteristics of residual claims on decision rules for resource allocation.[2]

### *B. Residual Claims: General Discussion*

The contract structures of organizations limit the risks undertaken by most agents by specifying either fixed payoffs or incentive payoffs tied to specific measures of performance. The residual risk—the risk of the difference between stochastic inflows of resources and promised payments to agents—is borne by those who contract for the rights to net cash flows. We call these agents the residual claimants or residual risk bearers.

The characteristics of residual claims distinguish organizations from one another and help explain the survival of organizational forms in specific activities. We first analyze and contrast the relatively unrestricted residual claims of open corporations with the restricted residual claims of proprietorships, partnerships, and closed corporations. We then turn to the more specialized residual claims of professional partnerships, financial mutuals, and nonprofits.

## II. Open Corporations

Most large nonfinancial organizations are open corporations. The common stock residual claims of such organizations are unrestricted in the sense that (1) stockholders are not required to have any other role in the organization, (2) their residual claims are freely alienable, and (3) the residual claims are rights in net cash flows for the life of the organization. Because of the unrestricted nature of the residual claims of open corporations, there is generally almost complete separation and specialization of decision functions and residual risk bearing.

### *A. Common Stock versus State Contingent Claims*

One can imagine claims that are even less restricted than the common stocks of open corporations. There could be "state contingent claims"—

[2] Eugene F. Fama & Michael C. Jensen, Separation of Ownership and Control, in this issue. See also Eugene F. Fama & Michael C. Jensen, Organizational Forms and Investment Decisions (Working Paper No. MERC 83-03, Univ. Rochester, Managerial Economics Research Center 1983).

that is, claims of the sort discussed by Arrow and Debreu[3] specifying payoffs for each possible future state of the world. Such state contingent claims allow any (hence generally "less restricted") allocation of risk. They are, nonetheless, fixed payoff promises. To specify the total payoffs to be obtained in all future states, one would need to identify all current and future decisions of an organization through state contingent claim contracts. Given the costs and information requirements this implies, it is not surprising that state contingent claims are not the dominant system for allocating risk.

We can also imagine state contingent claims that are true residual claims. The claim would cover a fraction of the organization's net cash flows in a given state rather than a specified payoff in that state. However, this type of claim generates conflicts among the claim holders of different states because alternative decisions shift payoffs across states and benefit some claim holders at the expense of others. Common stock that represents proportionate claims on the payoffs of all future states eliminates these agency problems, but at the sacrifice of some efficiency in the allocation of risk. Common stock and other common forms of residual claims also avoid most of the costs of defining and verifying states of the world.

### *B. The Advantages of Common Stock Residual Claims*

1. *Unrestricted Risk Sharing among Residual Claimants.* The common stock of open corporations allows more efficient risk sharing than residual claims that are not separable from decision roles, as, for example, in proprietorships and partnerships where the proprietors and partners are the decision makers and the primary residual claimants. Common stock allows residual risk to be spread across many residual claimants who individually choose the extent to which they bear risk and who can diversify across organizations offering such claims. Other things equal, portfolio theory implies that such unrestricted risk sharing lowers the cost of risk-bearing services.[4]

2. *Specialized Risk Bearing by Residual Claimants.* The activities of large open nonfinancial corporations are typically complicated, involving contracts with many factors of production, for example, different types of labor, raw materials, and managers. When there is significant variation through time in the probability of default on these contracts, contracting costs increase. In addition, because the human capital of agents is gener-

[3] Kenneth J. Arrow, The Role of Securities in the Optimal Allocation of Risk Bearing, 31 Rev. Econ. Stud. 91 (1964); Gerard Debreu, Theory of Value (1959).

[4] See, for example, Arrow, *supra* note 3; or Eugene F. Fama, Foundations of Finance chs. 7 & 8 (1976).

ally employed in a single organization, risk aversion tends to cause them to charge more for any risk they bear than security holders who can diversify risk across many organizations.[5]

Efficient accommodation of large-scale specialized risk bearing by residual claimants is an advantage of corporate common stock. To bond contractual payments to other agents, the common stockholders put up wealth, which is used to purchase assets. If the wealth required to bond promised payments goes beyond the value of inputs optimally purchased rather than rented, common stock proceeds can be used to purchase liquid assets, for example, the securities of other organizations, that have no function except to bond specialization of risk bearing by residual claimants.

3. *Purchase of Organization-specific Assets.* Klein, Crawford, and Alchian and Jensen and Meckling argue that because of conflicts of interest with outside owners of organization-specific assets—assets that have lower value to other organizations—rental contracts for such assets generate higher agency costs than outright purchase.[6] Common stock, with its capacity for raising wealth from residual claimants, is an efficient vehicle for financing such purchases in activities where using large amounts of organization-specific risky assets is efficient.

4. *Specialization of Management.* In the complicated production and distribution activities of large open corporations, coordinating the activities of agents, recontracting among them, and initiating and implementing resource allocation decisions are specialized tasks which are important to the survival of the organization and largely fall on its managers. However, managerial skills are not necessarily tied to wealth or willingness to bear risk, and incompetent managers who are important residual claimants can be difficult to remove. Thus, ignoring agency problems in the decision process, the survival of a complex organization is enhanced by common stock residual claims that allow specialization of management—in effect, the absence of a classical entrepreneur who is both decision maker and residual risk bearer.

5. *The Market Value Rule for Investment Decisions.* When common stocks are traded without transactions costs in a perfectly competitive capital market, the stockholders agree that resource allocation decisions

[5] See Patricia B. Reagan & Rene M. Stulz, Risk Bearing, Labor Contracts, and Capital Markets, (Working Paper Series No. MERC 82-19 Univ. Rochester Managerial Economics Research Center 1982) for an analysis of risk sharing between internal agents and residual claimants and for references to the related literature.

[6] Benjamin Klein, Robert Crawford, & Armen A. Alchian, Vertical Integration, Appropriable Rents, and the Competitive Contracting Process, 21 J. Law & Econ. 297 (1978); Michael C. Jensen & William H. Meckling, Rights and Production Functions: An Application to Labor-managed Firms and Codetermination, 52 J. Bus. 469 (1979).

should be evaluated according to their contribution to the current market value of their residual claims.[7] The market value rule weighs current against future resources according to the opportunity costs at which resources can be traded across time in the capital market. For example, the market value rule favors expenditures to reduce the current and future costs of delivering products whenever the current market value of the future cost savings is greater than the current expenditure. Product prices can then be lowered while still covering costs.

In contrast, when the horizon of the residual claims is less than the life of the organization, residual claimants assign zero value to cash flows that occur beyond the horizon.[8] Similarly, when residual claims are not freely alienable or separable from other roles in the organization, it is rational for risk bearers to attribute lower current value to uncertain cash flows than is implied by capital market prices for the future resources.[9] As a consequence, ignoring agency problems in the decision process, organizations with common stock residual claims, investing according to the market value rule which is optimal for their residual claimants, will be able to deliver products at lower prices than organizations with restricted residual claims.

### C. *The Agency Problems of Common Stock Residual Claims*

The unrestricted nature of the common stock residual claims of open corporations leads to an important agency problem. The decision process is in the hands of professional managers whose interests are not identical to those of residual claimants. This problem of separation of "ownership" and "control"—more precisely, the separation of residual risk bearing from decision functions—has troubled students of open corporations from Adam Smith to Berle and Means and Jensen and Meckling.[10] In "Separation of Ownership and Control"[11] we argue that this agency problem is controlled by decision systems that separate the management (initiation and implementation) and control (ratification and monitoring) of important decisions at all levels of the organization.

[7] See, for example, Eugene F. Fama, The Effects of a Firm's Investment and Financing Decisions on the Welfare of its Security Holders, 68 Am. Econ. Rev. 272 (1978).

[8] See E. G. Furubotn & S. Pejovich, Property Rights, Economic Decentralization and the Evolution of the Yugoslav Firm, 1965–1972, 16 J. Law & Econ. 275 (1973); and Jensen & Meckling, *supra* note 8.

[9] The details of the argument are in Fama & Jensen, Organizational Forms, *supra* note 2.

[10] Adam Smith, The Wealth of Nations (Cannan ed. 1904) (1st ed. London 1776); Adolf A. Berle & Gardiner C. Means, The Modern Corporation and Private Property (1932); Jensen & Meckling, *supra* note 1.

[11] Fama & Jensen, in this issue.

Devices for separating decision management and decision control include (1) decision hierarchies in which the decision initiatives of lower level agents are passed on to higher level agents, first for ratification and then for monitoring, (2) boards of directors that ratify and monitor the organization's most important decisions and hire, fire, and compensate top-level decision managers, and (3) incentive structures that encourage mutual monitoring among decision agents. The costs of such mechanisms for separating decision management from decision control are part of the price that open corporations pay for the benefits of unrestricted common stock residual claims.

## III. Restricted versus Unrestricted Residual Claims

The proprietorships, partnerships, and closed corporations observed in small-scale production activities differ in many ways both from one another and from open corporations. For example, proprietorships have a single residual claimant, whereas partnerships and closed corporations have multiple residual claimants. As a consequence, the residual claim contracts in partnerships and closed corporations must specify rights in net cash flows and procedures for transferring residual claims to new agents more explicitly than the residual claims in proprietorships.

However, for control of the agency problems in the decision process, the common characteristic of the residual claims of proprietorships, partnerships, and closed corporations that distinguishes them from open corporations is that the residual claims are largely restricted to important decision agents. This restriction avoids the agency problems between residual claimants and decision agents that arise because of separation of risk-bearing and decision functions in open corporations. Thus, costly mechanisms for separating the management and control of decisions are avoided.[12]

Restricting residual claims to decision makers controls agency problems between residual claimants and decision agents, but at the expense of the benefits of unrestricted common stock. The decision process suffers efficiency losses because decision agents must be chosen on the basis of wealth and willingness to bear risk as well as for decision skills. Residual claimants forgo optimal diversification so that residual claims and decision making can be combined in a small number of agents. Forgone diversification and limited alienability lower the value of the residual claims, raise the cost of risk-bearing services, and lead to less investment

[12] However, in partnerships and closed corporations, some mechanisms for resolving conflicts among residual claimant decision makers (for example, buy-out rules) are required.

in projects with uncertain payoffs than when residual claims are unrestricted. Finally, because decision agents have limited wealth, restricting residual claims to them also limits resources available for bonding contractual payoffs and for acquiring risky organization-specific assets.

An organizational form survives in an activity when the costs and benefits of its residual claims and the approaches it provides to controlling agency problems combine with available production technology to allow the organization to deliver products at lower prices than other organizational forms. The restricted residual claims of proprietorships, partnerships, and closed corporations are more likely to dominate when technology does not involve important economies of scale that lead to large demands for specialized decision skills, specialized risk bearing, and wealth from residual claimants. In these circumstances, the agency costs saved by restricting residual claims to decision agents outweigh the benefits that would be obtained from separation and specialization of decision and risk-bearing functions. On the other hand, unrestricted common stock residual claims are more likely to dominate when there are important economies of scale in production that (i) can be realized only with a complex decision hierarchy that makes use of specialized decision skills throughout the organization, (ii) generate large aggregate risks to be borne by residual claimants, and (iii) demand large amounts of wealth from residual claimants to purchase risky assets and to bond the payoffs promised to a wide range of agents in the organization. In such complex organizations the benefits of unrestricted common stock residual claims are likely to outweigh the costs of controlling the agency problems inherent in the separation and specialization of decision and risk-bearing functions. In these circumstances, the open corporation is more likely to win the competition for survival.[13]

## IV. Special Forms of Residual Claims

The restriction of residual claims to important decision agents distinguishes the residual claims of proprietorships, partnerships, and closed corporations from the unrestricted residual claims of open corporations. There are, however, other organizational forms, including professional partnerships, financial mutuals, and nonprofits, that offer more unusual residual claims. We explain the special characteristics of the residual claims of these organizations as effective devices for controlling special agency problems.

[13] In Fama & Jensen, Separation of Ownership, in this issue, we discuss how the diffusion of information among decision agents influences the survival of organizational forms. For simplicity, we have ignored these issues here.

### *A. Professional Partnerships*

Like the proprietorships, partnerships, and closed corporations discussed above, the residual claims of the professional partnerships observed in law, public accounting, medicine, and business consulting are restricted to important decision agents. However, in professional partnerships, a partner's share in net cash flows is renegotiated periodically, and his rights in net cash flows are often limited to his period of service in the organization. In effect, a professional partner's residual claim is a flexible and inalienable share of net cash flows for a limited horizon. Flexible sharing rules, inalienability, and limited horizons distinguish the residual claims of professional partnerships from those of the proprietorships, partnerships, and closed corporations observed in other activities. Moreover, these special features of professional partnership residual claims are generally retained when these organizations become professional service corporations for tax purposes.

1. *Decentralized Decision Making and Restricted Residual Claims.* In professional partnerships, large and small, individuals or small teams work on cases, audits, and so on. Because of the importance of specific knowledge about particular clients—knowledge that is costly to transfer among agents—it is efficient for the teams in large partnerships to make most decisions locally. Thus, with respect to the services rendered to customers, decision control takes place within teams, where interaction and mutual monitoring are heaviest. At this level, however, decision management (initiation and implementation) and decision control (ratification and monitoring) are not separate. To control the resulting agency problems, the residual claims in professional partnerships are restricted to the professional agents who are the important team members and who have major decision making roles. This is consistent with the hypothesis developed in "Separation of Ownership and Control"[14] that combination of decision management and control functions in one or a few agents leads to restriction of residual claims to the important decision agents.

2. *The Demand for Monitoring, Bonding, and Consulting.* Lawyers, public accountants, physicians, and some business consultants provide services where one incompetent act can do large damage to a client. As a consequence, certification and pedigree are important to clients. Moreover, even in the largest professional service organizations, services are rendered in individual cases by one or a few professionals. Responsibility for variation in the quality of services is easily assigned to individual agents, and the performance of agents is often well known to clients. In these circumstances, the value of human capital is sensitive to perfor-

[14] *Id.*

mance. In effect, unlimited liability is imposed on the human capital of professional agents by the market for their services. This gives the professional incentives to purchase monitoring and consulting to help limit losses in the value of human capital.

Since professional services are technical, a lawyer, physician, public accountant, or business consultant is efficiently monitored by others of the same training who can also provide valuable consulting services. Such mutual monitoring and consulting are encouraged when professional agents agree to pool net cash flows and to share liability for the actions of colleagues. Pooling of net cash flows and liability is attractive because it encourages mutual monitoring and consulting. Mutual monitoring and consulting improve the quality of services delivered, control liability losses, and enhance the human capital of the partners. Pooling of net cash flows and liability also has risk-sharing advantages.

The analysis is robust to the fact that partnerships sometimes purchase malpractice insurance. Insurance eliminates variability of liability payoffs by substituting a certain insurance premium. However, if premiums are renegotiated to reflect the malpractice experience of the insured, insurance does not destroy the professional's incentives to be monitored or to consult with other professionals.[15] In addition, insurance covers liability to customers but not reductions in the value of human capital caused by incompetent or malfeasant acts.

3. *Large Professional Partnerships and Flexible Sharing Rules.* Some professional partnerships have hundreds and sometimes thousands of partners. Such large partnerships provide portfolios of specialized services that are marketed and delivered over a wide geographical area. They can also provide large bonds to protect clients against losses from malfeasance or incompetence.[16] Large partnerships are also educational organizations, offering young professionals a wide range of opportunities and interaction with other professionals. We are more concerned, though, with the effects of size on the contract structures of these organizations than with explaining why they are large.

Having attained partner status, a professional may be tempted to free-ride on the efforts of colleagues. The residual claims of large partnerships take a direct approach to this agency problem. The residual claim is not generally a fixed share of net cash flows. Rather, a partner's share is renegotiated annually on the basis of past performance and estimates of likely contributions to future net cash flows. In these large partnerships

[15] David Mayers & Clifford W. Smith, Jr., On the Corporate Demand for Insurance, 55 J. Bus. 281 (1982), argue that insurance itself is a way to purchase monitoring.

[16] See Linda DeAngelo, Auditor Size and Audit Quality, 3 J. Accounting & Econ. 183 (1981).

service to a client is delivered by a small group of professionals who interact and monitor one another intensively. The composition of the teams changes from case to case to match specialized talents to specialized problems. As a result, the professionals develop knowledge of the talents and contributions of a range of colleagues. Flexible sharing rules add to partners' incentives to gather and communicate such knowledge to the renegotiation process.

Given flexible sharing rules and the way payoffs are tied to performance, large professional partnerships can be viewed as associations of proprietors who get together to obtain the benefits from marketing a portfolio of specialized skills both to clients and to young professionals who purchase specialized education. Or, since the partners often work in small teams that shift from case to case, a large partnership can be regarded as a fluid association of small partnerships.

4. *Limited Horizon Residual Claims.* Limitations on the horizon covered by residual claims cause organizations to bias decisions against alternatives that generate net cash flows beyond the horizon. In "Organizational Forms and Investment Decisions"[17] we argue that the limited horizon feature of the residual claims of professional partnerships reflects the relative unimportance of assets that are not effectively capitalized in the human capital of existing partners. There are generally no important patents, specialized assets, or technologies to be passed from one generation of partners to the next. Each partner brings a depleting asset—human capital—to the partnership. The annual readjustments of shares in net cash flows that are typical, especially in large professional partnerships, calibrate a partner's payoffs to reflect the current and expected future contributions of his human capital. When a partner's human capital is used up or withdrawn from the organization, contributions to net cash flows cease, and this is reflected in the termination, without substantial compensation, of his residual claim.

This explanation of the limited horizon feature of the residual claims of professional partnerships gets support from several sources:

1. Professional human capital serves as a bond against malfeasance when its value is sensitive to performance. However, professional human capital cannot be sold to cover liability losses to customers. To satisfy the demand for reimbursement for such losses and to bond their services further, partners generally extend their liability to tangible assets held outside the organization (that is, they contract for unlimited liability), or they purchase insurance against liability losses to clients. Such use of

[17] Fama & Jensen, *supra* note 2.

unlimited liability and insurance is consistent with the proposition that the dominant asset in a professional partnership is the inalienable human capital of the partners.

2. Unlike professional partnerships, the proprietorships, partnerships, and closed corporations observed in small-scale production activities commonly have mechanisms for transferring residual claims to the cash flows generated by assets other than human capital. Buy-out provisions with internal pricing rules for residual claims and first refusal rights are examples of such mechanisms. Moreover, the residual claims of these organizations are similar in other respects to those of professional partnerships, for example, restriction of the residual claims to important decision agents and periodic renegotiation of salaries to reflect variation through time in the contribution of human capital to net cash flows.

3. Most important, professional partners drop the limited horizon feature of their residual claims when there are substantial assets in the organization in addition to the human capital of existing partners. For example, a departing partner is generally compensated for his share in assets, such as cash and accounts receivable. More interesting, professional partnerships sometimes have devices for compensating a retiring partner for information about his clients that he passes along to remaining partners. Such payments for information reduce the incentives of partners to take actions that substitute near-term cash flows for long-term cash flows in a manner that inhibits organizational survival. It is also interesting that organizations in business and financial consulting that were once professional partnerships with limited horizon residual claims are tending to reorganize as open corporations. We hypothesize that this is largely caused by the pressure to transfer the rights to valuable nonhuman capital assets owned within the organization from one generation of residual claimants to the next.

### *B. Financial Mutuals*

A common form of organization in financial activities is the mutual. In some financial activities, including life insurance, casualty insurance, and personal savings, mutuals exist side by side with open corporations, and there is no obvious tendency for one form of organization to dominate. Mutuals are dominant among investment mutual funds, but commercial banks are always corporations. Our task is to explain why mutuals survive in some financial activities but not in others.

1. *The Control Function of Redeemable Claims.* An unusual characteristic of mutuals is that the residual claimants are customers, for example, the policyholders of mutual insurance companies, the depositors

of mutual savings banks, and the shareholders of mutual funds. However, the unique characteristic of the residual claims of mutuals, which is important in understanding their survival value, is that the residual claims are redeemable on demand. The policyholder, depositor, or shareholder can, at his initiative, turn in his claim at a price determined by a prespecified rule. For example, the shareholder of an open-end mutual fund can redeem his claim for the market value of his share of the fund's assets, while the whole life or endowment insurance policyholder, like the shareholder of a mutual savings bank, can redeem his claim for its specified value plus accumulated dividends.

There is a special form of diffuse control inherent in the redeemable claims of financial organizations. The withdrawal decisions of redeemable claim holders affect the resources under the control of the organization's managers, and they do so in a more direct fashion than customer decisions in nonfinancial organizations. The decision of the claim holder to withdraw resources is a form of partial takeover or liquidation which deprives management of control over assets. This control right can be exercised independently by each claim holder. It does not require a proxy fight, a tender offer, or any other concerted takeover bid. In contrast, decisions of customers in open nonfinancial corporations, and the repricing of the corporation's securities in the capital market, provide signals about the performance of its decision agents, but without further action, either internal or from the corporate takeover market, the judgments of customers and of the capital market leave the assets owned within the organization under the control of the managers.

2. *The Limitations of Redeemable Claims.* Redeemable claims are not an efficient general financing instrument for nonfinancial organizations. Giving every claim holder the right to force contractions of assets would impose substantial costs on nonfinancial activities. For example, nonfinancial corporations typically have large demands for organization-specific assets that have lower value to other organizations. Substantial costs would be incurred in forced sales of such illiquid assets to accommodate redemptions of claims. In contrast, a financial organization purchases and sells financial assets to meet purchases and redemptions of claims. This is accomplished at low cost because financial assets are not organization specific and can be traded with low transactions costs.

There is a more subtle problem with redeemable residual claims in nonfinancial activities. The pricing rule used to redeem claims preempts development of an outside secondary market for the claims. No one will buy at a price higher than the redemption price or sell at a lower price. The absence of secondary markets for the redeemable claims of financial organizations is no problem since redemption price rules (for example, the net asset value rule for mutual fund shares) can be based on prices of

financial assets quoted in the capital market. In contrast, the residual claims of nonfinancial organizations are claims on uncertain future cash flows. Without a secondary market for the claims, accurate and inexpensive external indexes of their value would not exist, and any internal redemption pricing rule would be costly or arbitrary.

3. *Corporate Financial Organizations.* Our analysis should also explain why some financial organizations are mutuals and others are open corporations. The theory predicts that more of the business of financial mutuals is management of portfolios of financial assets whereas corporate financial organizations are more involved in business activities requiring organization-specific assets that are expensive to trade and that generate uncertain future net cash flows that are not easily priced.

Observation of different financial organizations is roughly consistent with these hypotheses. Most investment mutual funds manage portfolios of traded securities. The funds are open-end mutuals with redeemable residual claims, except for a handful of closed-end funds organized as open corporations with nonredeemable common stock residual claims. Consistent with our hypothesis, the closed-end funds often hold assets such as real estate or shares in new ventures that are expensive to value and to trade, though this is not universal.[18]

Commercial banks are required by law to be corporations. Our analysis suggests that they would be corporations in the absence of the requirement. A major part of bank business is providing transaction services. Depositors pay for these services directly or by forgoing returns on deposits. The primary assets of commercial banks are short-term loans. Granting and renewing these loans involves monitoring the borrowers and certifying credit worthiness—a service for which the borrowers pay. The capital value of the stochastic net cash flows from services to depositors and borrowers would not easily be captured in the internal pricing rule of a redeemable residual claim.

What survives in commercial banking is a contract structure involving deposits that, like all redeemable claims, allow the depositors to affect the resources under management control. Consistent with our model, variation in deposits is met by purchases and sales of government and private bonds traded at low cost in secondary markets. Since depositors do not have residual claims on net cash flows from service and other activities, redemption of deposits does not require internal valuation of these net cash flows. The rights to the residual net cash flows are assigned to

[18] See Rex Thompson, Capital Market Efficiency, Two-Parameter Asset Pricing and the Market for Corporate Control: The Implications of Closed-End Investment Company Discounts and Premiums (1978) (Ph.D. dissertation, Univ. Rochester, Graduate School of Management).

TABLE 1
BUSINESS RECEIPTS AND LONG-TERM NONFINANCIAL ASSETS OF CORPORATE AND MUTUAL FINANCIAL ORGANIZATIONS, SELECTED YEARS

| | 1967 | 1969 | 1971 | 1973 | 1975 |
|---|---|---|---|---|---|
| Business receipts as a percentage of total receipts: | | | | | |
| Corporate commercial banks | 13.6 | 12.1 | 14.0 | 12.0 | 8.3 |
| Savings and loans | 4.7 | 4.7 | 6.3 | 5.4 | 5.6 |
| Mutual savings banks | 2.9 | 3.0 | 3.1 | 2.8 | 3.1 |
| Corporate life insurance | 82.7 | 82.7 | 83.0 | 82.0 | 81.0 |
| Mutual life insurance | 72.9 | 72.6 | 72.9 | 72.1 | 72.1 |
| Corporate casualty insurance | 91.5 | 89.2 | 89.7 | 87.7 | 87.1 |
| Mutual casualty insurance | 94.0 | 93.0 | 92.7 | 92.0 | 90.1 |
| Long-term nonfinancial assets as a percentage of total assets: | | | | | |
| Corporate commercial banks | 2.4 | 2.7 | 3.0 | 3.2 | 3.0 |
| Savings and loans | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Mutual savings banks | 1.2 | 1.1 | 1.2 | 1.6 | 1.7 |
| Corporate life insurance | 4.9 | 6.1 | 5.4 | 5.4 | 6.5 |
| Mutual life insurance | 2.8 | 3.1 | 3.2 | 3.3 | 3.5 |
| Corporate casualty insurance | 5.3 | 7.6 | 9.0 | 9.5 | 9.5 |
| Mutual casualty insurance | 3.6 | 3.9 | 3.7 | 3.9 | 3.6 |

SOURCE.—U.S. Internal Revenue Service, computer tape of corporate statistics of income. Business receipts are revenues other than interest, dividends, and capital gains. Policy premiums are included in business receipts for insurance companies.

common stock. Since the common stock is not redeemable, there are incentives for development of a secondary market. The residual claims against uncertain future net cash flows are then priced more effectively than would be the case with redeemable residual claims for which there would be no secondary market. Such mixed capital structures, with fixed value redeemable claims (policies or deposits) and nonredeemable common stock residual claims, are also characteristic of the savings banks and insurance companies organized as open corporations.

Our analysis should also explain the differences between the corporate and mutual organizations observed in the same financial activity, for example, life insurance or personal saving. Relative to the mutuals, corporate financial organizations should be more involved in business activities other than management of financial assets, and these business activities should involve relatively more nonfinancial assets that can only be varied with large costs. The data on the business receipts (revenues other than interest, dividends, and capital gains) and long-term nonfinancial assets of banks and life insurance companies in Table 1 are consistent with these

hypotheses. Corporate commercial banks have more business receipts relative to total receipts and more long-term nonfinancial assets relative to total assets than mutual savings banks or savings and loan associations. More interesting, savings and loans, which are sometimes corporations, have relatively more business receipts and long-term nonfinancial assets than mutual savings banks. Likewise, corporate life insurance companies have higher ratios of business receipts to total receipts and higher ratios of long-term nonfinancial assets to total assets than mutual life insurance companies.[19]

The data for casualty insurance organizations are less supportive. Consistent with our analysis, mutual casualty companies show lower ratios of long-term nonfinancial assets to total assets than corporate casualty companies. However, contrary to our analysis, the mutuals have higher ratios of business receipts to total receipts.[20]

Finally, an interesting organizational experiment is taking place in the banking sector. Although commercial banks are required to be corporations, regulations restricting commercial banks and savings banks to different activities are being relaxed. The direction is toward allowing savings banks to provide services such as checking privileges and short-term business loans, previously restricted to commercial banks. If the dominance of the corporate format in commercial banking is not the consequence of regulation, then as savings banks become involved in the service activities of commercial banking, they will tend to organize as corporations. On the other hand, if commercial banking services can be provided at lower prices with the mutual format, corporate commercial banks will not survive when mutual savings banks are allowed to compete with them.

### *C. Nonprofit Organizations*

The familiar economic analysis of the entrepreneurial firm is of little help in explaining the dominance of nonprofits in some activities, such as religion, education, research, and classical music, but not in others, including automobile manufacturing, legal services, and popular music. We explain the survival of nonprofits in donor-financed activities as an efficient solution to the special agency problem posed by private donations.

[19] Because policy premiums are included as business receipts, business receipts are a larger fraction of total receipts for insurance companies than for banks. Nevertheless, comparison of the business receipts of corporate and mutual insurance companies is relevant.

[20] See David Mayers & Clifford W. Smith, Jr., Contractual Provisions, Organizational Structure, and Conflict Control in Insurance Markets, 54 J. Bus. 407–33 (1981), for additional hypotheses regarding contract structures in the insurance industry.

1. *Nonprofit Organizations and Donations.* Donations per se do not imply dominance for the nonprofit form. When donations are applied directly to well-defined units of output, a for-profit producer perceives them as a reduction in variable costs or as an increase in demand and increases output accordingly. In fact, we observe unit subsidies both in activities organized on a nonprofit basis, for example, educational scholarships, and in activities organized on a for-profit basis, for example, free tickets to sports events for various groups.

However, some donors wish to provide general donations to particular producers (churches, universities, etc.) rather than unit subsidies. Such unrestricted donations pose agency problems for any organization with residual claimants. Residual claimants contract for rights to net cash flows. When activities are financed in part through donations, part of net cash flow is from resources provided by donors. Contracts that define the share of residual claimants in net cash flows are unlikely to assure donors that their resources are protected from expropriation by residual claimants. One solution to this agency problem is to have no alienable residual claims and to contract with donors to apply all net cash flows to output. Thus, our hypothesis is that the absence of residual claims avoids the donor-residual claimant agency problem and explains the dominance of nonprofits in donor-financed activities.[21]

The absence of alienable residual claims in nonprofits does not mean that residual risk is not borne. When net cash flows are used to expand outputs or to lower the prices of outputs, part of the risk of net cash flows is borne by consumers and part by the factors used to produce the outputs. Thus, residual net cash flows are allocated, but there are no specific residual claimants with alienable property rights in net cash flows. Moreover, the absence of residual claims does not mean that nonprofits make no profits. It means that alienable claims to profits do not exist.

Donations can substitute for the resources provided by residual claimants to purchase assets that are optimally owned rather than rented. When held as endowment, donations also help to bond contracts with

[21] Henry B. Hansmann, The Role of Nonprofit Enterprise, 89 Yale L. J. 835 (1980), analyzes the nonprofit organization in detail, but he tends to attribute the nonprofit form more to the nature of products than to the agency problems of donations. He treats donors as customers and looks for product characteristics that would make for "contract failure" in a for-profit framework. For example, charity is delivered to third parties, and the customer (donor) has difficulty verifying delivery. Hansmann also argues that the nonprofit form is attractive for high technology goods (because the customer has difficulty verifying quality) and public goods. However, his approach predicts wider dominance for nonprofits (for example, all high technology or public goods) than is observed. The hypothesis that the nonprofit form is related to donor financing is more promising.

other agents in the organization. From a survival viewpoint the advantage of donations over resources provided by residual claimants is that donors forgo claims on their donations and on the returns earned on the donations, and this tends to allow the organization to deliver its products at lower prices.

Our nonprofit hypothesis deals only with activities financed by donations. Such donor-financed activities are dominated by nonprofits, for example, private universities, churches, hospitals, charities, and cultural performing groups (symphony orchestras, ballet companies, and opera companies). However, the limited scope of the hypothesis means that it cannot explain the nonprofits observed in activities where donations play no role, for example, country clubs.

2. *Other Explanations for Nonprofits.* One criticism of our hypothesis about the causal relation from donations to the nonprofit form is that it ignores the difficulty of measuring and selling the outputs of, for example, churches. The inference is that this explains the nonprofit form in these activities. It is difficult to measure all the things one gets from religion, education, research, or cultural activities. However, the same is true of products such as rock music and legal or psychiatric services marketed by organizations that have residual claims. Moreover, if donations disappeared, for-profit organizations, or more precisely organizations that have alienable residual claims, would arise to supply religion, research, and education. Some for-profit organizations supply these services now. For-profit educational organizations and research groups sell definable parts of their outputs; tuition for education and royalties to patents are examples. For-profit churches might sell ordinations, indulgences, or admission to services. Consistent with our hypothesis, when education and research are provided by organizations that have alienable residual claims, these organizations are not also financed with donations.

Some argue that sale of some products and services (for example, religion) is not acceptable and that this explains the nonprofit form in these activities. This is consistent with our hypothesis. When giving outputs away generates more resources through donations than sale, survival dictates the nonprofit form. Thus, universities generally make research freely available because this generates more resources through research grants and other donations than direct sale of the research. Churches usually do not insist on payment of admission charges or member taxes because they attract more total resources through voluntary contributions.

Coldly economic statements like these lead to the criticism that our analysis leaves no room for altruism. The opposite is true. Altruistic internal agents increase the willingness of altruistic customers and donors

to provide resources. In our terms, the altruism of internal agents allows low cost control of agency problems and acts to bond donors and customers against expropriation. Strong tastes for an organization's outputs on the part of internal agents and customers—what we call altruism in the case of nonprofits—contribute to the survival of any organization. All organizations try to develop such brand loyalty, but the nonprofits are especially successful, perhaps because of the nature of their products.

Some readers claim that donors, customers, and internal agents have tastes for the nonprofit form itself in some activities. To explain the complete dominance of nonprofits in an activity, however, this approach requires uniformity of tastes. If subgroups of customers, internal agents, and donors have no preference for the nonprofit form, we would expect more competition among profit and nonprofit organizations in donor-financed activities.

Finally, tax concessions are important to some nonprofits. However, the major activities dominated by nonprofits, such as religion, private education, research, hospital care, and certain cultural activities, were dominated by nonprofits before taxes were a major issue.[22] Our hypothesis about the relation between unrestricted donations and the nonprofit form provides a more consistent explanation of the historical dominance of nonprofits in these activities. On the other hand, tax exemptions probably explain the nonprofits in activities where private donations are not a factor, including nursing homes, homes for the elderly, and private nursery schools.

3. *The General Control Problem in Nonprofits.* The donors of nonprofits have agency problems with internal decision agents similar to those faced by residual claimants in other organizations, such as open corporations and financial mutuals, where important decision managers do not bear a major share of the wealth effects of their decisions. We argue in "Separation of Ownership and Control"[23] that, like all other organizations characterized by separation of decision management from residual risk bearing, a nonprofit is on stronger footing in the competition for survival when it has a decision system that separates the management (initiation and implementation) and control (ratification and monitoring) of important decisions. For nonprofits the survival value of such decision systems is due to the assurances they provide that donations are used effectively and are not easily expropriated.

For example, like open corporations and financial mutuals, donor

[22] See *id.*

[23] Fama & Jensen, in this issue.

nonprofits have boards of directors (or trustees) with the power to ratify and monitor important decisions and to hire, fire, and set the compensation of important decision agents. The similarities of the decision control systems of nonprofits, financial mutuals, and open corporations, along with the differences due to special agency problems and special features of residual claims (including the absence thereof), are discussed in "Separation of Ownership and Control."

## V. Summary and Conclusions

Most goods and services can be produced by any form of organization. Organizations compete for survival, and the form of organization that survives in an activity is the one that delivers the product demanded by customers at the lowest price while covering costs.

The characteristics of residual claims are important both in distinguishing organizations from one another and in explaining the survival of specific organizational forms in specific activities. We explain the survival of organizational forms largely in terms of the comparative advantages of characteristics of residual claims in controlling the agency problems of an activity. The analysis identifies the underlying characteristics of activities that determine the organizational forms that survive.

### *A. Open Corporations*

The common stock residual claims of open corporations are unrestricted in the sense that (1) they are freely alienable, (2) they are rights in net cash flows for the life of the organization, and (3) stockholders are not required to have any other role in the organization. Other things equal, the open corporation is more likely to survive in an activity the greater

1. the benefits of unrestricted risk sharing,
2. the benefits of specialized management,
3. the amount of organization-specific assets to be purchased,
4. the wealth required to bond contractual payoffs, and
5. the lower the cost of separating decision management (initiation and implementation) from decision control (ratification and monitoring).

For example, these factors favor the open corporate form when the technology in an activity implies economies of scale that involve (*a*) large aggregate residual risks to be shared among residual claimants, (*b*) large demands for specialized decision agents throughout the organization, and (*c*) large demands for wealth from residual claimants to bond contracts and to purchase organization-specific assets. Economies of scale are also likely to imply organizations that are complex in the sense that valuable specific knowledge—knowledge that is expensive to transfer across

agents—is widely diffused among agents.[24] Such complexity tends to favor unrestricted common stock residual claims which allow specialization of management and delegation of decision functions to agents with valuable relevant knowledge.

The benefits of unrestricted common stock residual claims in activities where optimal organizations are large and complex offset the agency costs resulting from the separation of decision functions and residual risk bearing. In "Separation of Ownership and Control" we contend that these agency costs are controlled by decision structures that separate the management and control of important decisions.

### *B. Proprietorships, Partnerships, and Closed Corporations*

In a fictional world where contracts with decision agents were costlessly written and enforced, separation and specialization of decision and risk-bearing functions would involve no agency costs, and most if not all organizations would have unrestricted residual claims. However, actual organizations can realize the benefits of unrestricted residual claims only by incurring costs to control agency problems between specialized decision agents and specialized residual risk bearers. As a consequence, it is advantageous in some activities to trade the benefits of unrestricted common stock residual claims for the low-cost control of agency problems in the decision process obtained when residual claims are restricted to important decision agents. This restriction is a common characteristic of the residual claims of proprietorships, partnerships, and closed corporations. Other things equal, these organizations with their restricted residual claims are more likely to survive in activities where the costs of separating decision management from decision control are high. They are also more likely to survive when there are no important economies of scale and thus (*a*) no large demands for unrestricted risk sharing and specialized decision skills, and (*b*) no large demands for wealth from residual claimants to bond contracts and purchase organization-specific assets.

### *C. Special Forms of Residual Claims*

Organizations such as professional partnerships, financial mutuals, and nonprofits have residual claims with unique characteristics that we explain as devices for controlling special agency problems.

1. *Professional Partnerships.* These are characterized by (1) restriction of residual claims to major decision agents, (2) periodic renegotiation

[24] The role of specific knowledge is discussed in Fama & Jensen, Separation of Ownership and Control, in this issue.

of partner shares in net cash flows (flexible sharing rules), and (3) inalienable residual claims in net cash flows with horizons that are often limited to a partner's period of service in the organization. Professional partnerships are more likely to survive in an activity when

1. valuable specific knowledge relevant to both the management and control of decisions is combined and diffused among agents,
2. there are no strong demands for organization-specific tangible assets, and
3. the benefits from consulting and mutual monitoring among decision agents are high.

These characteristics are observed in professional service activities (law, public accounting, and business consulting) where (1) restricting residual claims to important decision agents helps control the agency problems caused by delegating combined decision management and control rights with respect to cases, audits, and so forth, to agents with relevant specific knowledge; (2) the primary asset of the activity is professional human capital; and (3) mutual monitoring and consulting among agents are important to maintain the value of human capital, which is sensitive to performance.

2. *Financial Mutuals.* The distinguishing characteristic of the residual claims of financial mutuals is that the policyholder, depositor, or shareholder can sell his claim to the organization on demand at a price determined by a rule. The decision to withdraw resources by the holder of a redeemable claim is a form of partial takeover or liquidation that deprives management of control over assets. This mechanism for decision control can be exercised independently by each claim holder. It does not require a proxy fight, a tender offer, or any other concerted takeover bid. Mutuals are more likely to survive in an activity the lower the cost

1. of expanding and contracting assets and
2. of obtaining accurate indices of asset values.

These conditions occur in financial organizations where assets are primarily the securities of other organizations. Redeemable residual claims are a low-cost mechanism for controlling agency problems between the residual claimants and the decision agents of financial mutuals because accurate and inexpensive indexes for asset values are available and the assets are traded with low transactions costs. Redeemable claims are a high-cost mechanism for decision control in activities that involve large amounts of assets not traded in secondary markets. Redeemable residual claims are also inefficient in activities that involve large amounts of lumpy or organization-specific assets that can be varied only with large costs.

3. *Nonprofits.* The nonprofit organization is characterized by the

absence of alienable residual claims to net cash flows and contractual constraints on the distribution of net cash flows. Inalienable residual claims are vested in a board of trustees and net cash flows are committed to current and future output. Nonprofits are more likely to survive in an activity

1. the greater is the potential supply of donations and
2. the lower is the cost of separating decision management from decision control.

The nonprofit organization is a solution to the agency problem posed by donations. When the activities of an organization are financed in part through donations, part of stochastic net cash flow is due to the resources provided by donors. Contracts that define the share of residual claimants in net cash flows are unlikely to assure donors that their resources are protected against expropriation by residual claimants. One solution to this agency problem between donors and residual claimants is to have no residual claimants and to contract with donors to apply net cash flows to future output. The absence of alienable residual claims means that decision managers in nonprofits do not bear the wealth effects of their decisions. As in other organizations where residual risk bearing and decision management functions are separated, the resulting agency problems in the decision process are controlled by decision structures that separate the management and control of important decisions.

## APPENDIX

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