THE STRUCTURAL CHARACTERISTICS OF FARMER COOPERATIVES AND THEIR BEHAVIORAL CONSEQUENCES

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To understand decisionmaking in farmer cooperative firms, it is first necessary to understand how cooperative firms differ from other types of businesses. This paper outlines the distinguishing structural characteristics of farmer cooperatives and, based on those characteristics, it develops hypotheses about how the behavior of farmer cooperatives, is likely to differ from that of investor-owned firms (IOFs). The term "structure," as used in the paper, is defined to include not only the organizational components of cooperative firms but also basic operating rules common to these firms, such as distributing net margins via patronage. The first part of the paper briefly reviews alternative definitions of farmer cooperatives and identifies several characteristics common to these organizations. The second, and largest, part of the paper traces through some of the consequences of these characteristics for the behavior of participants in farmer cooperatives and develops hypotheses regarding how that behavior will vary in different circumstances. The final section briefly summarizes the major conclusions of the paper.

Defining a Farmer Cooperative

Cooperative firms frequently are defined as businesses that are owned by their patrons and follow at least some of the Rochdale principles, which are listed by Roy (p. 258) as:

1. Net margins distributed according to patronage;
2. Democratic control--one-member/one-vote;
3. Limited return on stock;
4. Limitation on the number of shares owned;
5. Open membership;
6. Trading on a cash basis;
7. Membership education in the cooperative way of doing business;
8. Political and religious neutrality;
9. No unusual risk assumption; and
10. Goods sold at regular retail prices, with net margins rebated to members, rather than discounted retail prices.

Practically no modern cooperatives follow all the Rochdale principles. The problem of defining a cooperative as a business that follows some of these principles is that any two cooperatives thus defined may not have any characteristic in common. Furthermore, while some of the Rochdale principles may be important in fundamentally defining the structure of cooperatives, others simply represented prudent business practices at the time of the

Rochdale pioneers. The prohibition on credit sales, for example, may have been appropriate during the 18th century, when the banking and credit system was relatively undeveloped, but prohibiting present-day cooperatives from extending credit would place them at a severe competitive disadvantage. Certain other Rochdale principles, such as the requirements that there be "no unusual risk assumption" and that goods be sold at "regular retail prices," are so vague as to be nonoperational.

Even the more "fundamental" of the Rochdale principles are not always followed by farmer cooperatives. Every agricultural cooperative, for example, follows some form of closed membership, at least insofar as membership is restricted to farmers. Many agricultural marketing cooperatives further restrict membership because of limitations in plant capacity, the desire to ensure product quality, or other reasons. Nor do all farmer cooperatives follow the one-member/one-vote rule (see Ward, Schneider, and Lopez).

Given the ambiguity of using the Rochdale principles to define a cooperative, Schaars (cited by Roy, p. 259) argued that there were only three essential characteristics of a cooperative:

1. Service at cost to member-patrons;

2. Democratic control by member-patrons (where the exact meaning of "democratic" was left undefined); and

3. Limited return on equity capital.

A cooperative, in Schaars' view, was a member-controlled business in which the return to investment was distributed primarily according to patronage rather than according to ownership of equity in the organization.

Given the variation in cooperatives' practices, it probably is impossible to devise a concise definition of a cooperative that would be valid for every organization that appears, on the basis of everyday observation, to act like a cooperative (Bateman, Edwards, and LeVay). The approach taken in this paper is similar to that of Schaars: Three characteristics common to most farmer cooperatives are identified and used to define an "archetypical" or "pure" farmer cooperative. These characteristics incorporate and elaborate on the points covered in Schaars' definition and in the first four Rochdale principles. There undoubtedly are cooperatives that do not exhibit all of these characteristics. As Eschenburg (pp. 84-85) pointed out, given the diversity of these organizations, no one definition or theory of cooperatives is likely to be comprehensive.

For the purposes of this paper, a farmer cooperative firm is defined as a business with the following characteristics:

1. The stockholders, who are farmers, are the major users of the firm's services.

2. The benefits a stockholder receives from committing capital to a cooperative are tied largely to patronage. There are three reasons for this:

   (a) The business pays a strictly limited dividend on equity capital invested in the organization.

   (b) Net margins are distributed among stockholders in proportion to their patronage with the business rather than in proportion to their equity ownership in the firm.[1]

   (c) Stock of cooperative firms does not appreciate because there is a very limited or nonexistent secondary market for it. Therefore, capital gains are not a major benefit of stock ownership in cooperatives, in contrast to IOFs.[2]

3. The formal governance of the business by the stockholders is structured "democratically" in the sense that:

   (a) Voting power is not proportional to equity investment. The limitation on "voting one's equity" may be in the form of one-member/one-vote rule, or voting may be proportional to patronage or stock ownership but subject to some limit such as restricting any one member from having more than 5 percent of the total votes.

   (b) There are strict limitations on the number of nonstockholders who may serve on the board of directors.

Implications for Participant Behavior

Each of these three characteristics results in differences between the incentives faced by participants in cooperatives and those faced by participants in IOFs. These differences in turn may lead to differences in the behavior of the two types of organizations.

Behavioral Differences Due to Stockholders Being Maior Users of the Firm's Services

To the extent that stockholders influence a firm's decisions, one would expect the decisions of a firm to be different if its stockholders were major users of its services than if they were not. Cooperative theorists from the 1940s through the 1970s have stressed some of these differences by pointing out how the objective function of cooperatives might differ from that of IOFs (LeVay).

Broader Scope for Optimization- -The scope for optimization in a farmer cooperative is potentially broader and more diffuse than in a competing IOF that is not vertically integrated into farming. It is broader in the sense that a profit-maximizing farmer-member would be interested not in running the farm and the cooperative as separate profit centers but in optimizing the

performance of the integrated farm/cooperative system. The scope for optimization is more diffuse because cooperative returns are distributed according to patronage, not investment. As a result, the cooperative does not have one locus for profit maximization but a separate locus for each member, giving rise to a host of problems that attend collective choice. These problems are reflected most clearly in debates within cooperatives about pricing, financing, and pooling policies.[3]

The broader scope for optimization in cooperatives may be manifested by cooperatives taking into account their farmer-members' fixed costs when making decisions and by differences between the pricing practices of farmer cooperatives and those of IOFs.

Items that represent fixed costs for the stockholder-patrons may receive greater consideration in a cooperative's decisions than they would in the decisions of an IOF because the market transforms the fixed costs of an IOF's customers or suppliers into variable costs for the firm. An agricultural processing cooperative, for example, will likely give greater emphasis to providing its supplier-members a "home" for their product than will an IOF because the cooperative takes account of the need of its stockholders to amortize their fixed on-farm production investments. An IOF usually does not have to deal directly with its suppliers' fixed costs; they are transformed via the market into the raw-product price that the IOF pays, which the IOF processor considers as a purely variable cost.

This tendency of farmer cooperatives to give greater weight to their patrons' fixed costs results in the capital of cooperatives being less mobile than that of other firms. Farmer cooperatives tend to concentrate their investments in agribusiness activities closely related to the farming activities of the member-stockholders because the stockholders might suffer substantial capital losses if their farming activities were not adequately supported. These capital losses would not affect the income of stockholders of an IOF serving these farmers; hence, there would be little pressure on IOF management to invest in these agribusiness activities if more profitable opportunities lay elsewhere. One would therefore expect IOFs to shift their resources in and out of agribusiness more frequently than would cooperatives, whose assets are tied to those of their stockholder-members.

The vertically integrated nature of a farmer cooperative may also lead to different managerial behavior than in an IOF because the cooperative may have to bear certain costs that it could shed onto others were it not owned by its patrons. For example, a cooperative may be less able to drive a hard bargain with a unionized labor force than is an IOF. The cost of a strike can be very high to the stockholders of a farmer cooperative, as it can deny them access to the cooperative's services at a critical time in the crop cycle. Whereas an IOF might try to weather a strike by simply shutting down, thereby shifting some of the cost of the strike onto its farmer-customers, a cooperative manager who tried this strategy would likely face strong pressure from the stockholders to settle the strike quickly. The stockholder-user identity forces the manager to take a more integrated view of the firm's costs and benefits.

Because cooperative firms are owned by their patrons, their pricing behavior may differ from that of IOFs. Indeed, the rationale for establishing a "competitive yardstick" cooperative is that the cooperative will price its services differently than local IOFs, thereby forcing these firms to behave more competitively. The pricing behavior of cooperatives also may differ from that of IOFs because cooperative managers recognize that pricing decisions of a cooperative affect the distribution of income among the stockholders. This limits the managers' latitude in setting prices.[4]

In addition, the prices paid or charged by cooperatives have some of the characteristics of transfer prices in a vertically integrated firm; potentially they can be adjusted to affect the cash flow and tax liability of the patrons. For example, patrons in high marginal tax brackets may pressure the cooperative's management to retain net margins as unallocated equity so that the tax liability for the earnings accrues to the cooperative, which may be in a low marginal tax bracket, rather than to the members. Patrons in low tax brackets, who also may face cash flow difficulties, often lobby for net margins to be paid to the members as cash patronage refunds. For these patrons, the tax liability on the refund is often small compared to its benefits in terms of increased cash flow.[5]

The cooperative may even eliminate some of the combined member/cooperative tax liability by converting potential earnings into nontaxable forms, such as consumer surplus. This can be achieved by using some of the cooperative's earnings to subsidize the price of consumer goods and services sold to members. This suggests that cooperatives have an incentive to provide certain amenities to their members, such as cut-rate life insurance, that are not directly related to farm production.[6]

A cooperative's ability to benefit from its broader scope for optimization may be limited by two factors: (1) the structure of incentives facing individual farmer-members and (2) a dearth of common interests among a highly heterogeneous membership.

Several cooperative theorists (Kaarlehto; Eschenburg; Lopez and Spreen) have noted that in many situations the interest of the membership of a cooperative as a whole does not correspond with that of individual members. For a farmer cooperative firm to take advantage of its broader scope for optimization, the operations of the cooperative have to be coordinated with those of the members' farm firms. If incentives exist for the members to operate their farms in a totally independent manner (e.g., expanding production even though all members would benefit from a mutual reduction of output), the benefits of coordination will be lost. These situations often resemble prisoner's dilemmas and are analyzed in another paper.[7]

Coordination of the cooperative's activities with those of its member firms also may be reduced if the membership is highly heterogeneous. With a highly heterogeneous membership, particularly one in which the members perceive themselves as being in opposing camps (e.g., butterfat producers vs. oilseed producers), it may be difficult to get members to agree on anything other than running the cooperative as a separate profit center. This is the classic problem of collective choice, i.e., trying to find a pattern of

behavior for the collective that faithfully reflects the preferences of all the individual members (Arrow).[8] In game-theoretic terms,[9] the core of the bargaining game between stockholders may collapse to only one solution- -independent profit maximization of the stockholders' individually and jointly-owned firms. This does not necessarily mean the farmer-members are poorly served by such cooperatives. The stockholders may be happy with the cooperative's performance in the same sense investors in an IOF are happy with their firm's performance. To the extent that the cooperative operates as a separate profit center, however, the potential gains to the cooperative's stockholders from the organization's broader scope for optimization are lost.

More Diffuse Scope for Optimization: Pooling Issues and Income Distribution- -In multiproduct or multiservice cooperatives, one of the most important consequences of the stockholders being users of the firm's services is that the stockholders become vitally interested in the firm's pricing of individual goods and services, not simply in its overall financial performance. The income that a stockholder derives from an IOF depends on the firm's "bottom line," but the income of a cooperative's stockholder often depends more on the prices of the individual goods and services purchased from the cooperative than on the organization's overall profitability. As a result, questions of pricing, product pooling, and joint cost allocation become issues of keen interest to the stockholders. Unlike their counterparts in an IOF, the stockholders of a cooperative are intensely interested in the income-distribution consequences of their firm's marketing and cost-allocation decisions. Members' concerns about those decisions are likely to be greatest when the members face financial difficulties and hence cannot "afford" to cross-subsidize their co-members.

Because members of a cooperative who produce or purchase different products will have different preferences for how the cooperative should set prices and allocate costs, price setting and cost allocation become much more delicate issues for management of cooperatives than they are in IOFs. Instead of representing merely strategic questions about how best to improve the firm's financial performance, these decisions directly affect the stockholders' willingness to patronize and contribute financially to the organization. This stockholder sensitivity to pricing and cost-allocation has two implications. First, price setting and cost allocation are likely to be more costly processes in cooperatives than in IOFs. Not only do cooperative stockholders often demand to be involved in these decisions (e.g., via the board of directors), but because of the diversity of stockholder interests it may be difficult to reach a consensus about what the appropriate pricing and cost-allocation rules should be. In contrast, in an IOF, management often makes these decisions with no stockholder input whatsoever. Second, a cooperative's ability to cut prices and employ cross-subsidies to gain market share may be much more circumscribed than that with an IOF. The stockholders who, through their patronage of particular goods and services, finance the subsidies for the discounted items may object to carrying an "unfair burden" in the cooperative's quest for an expanded market share. As a result, cooperatives may be less able than IOFs to enter new fields where gaining a toehold in the market requires initial price-cutting. This reinforces the

tendency of cooperatives to have a more narrow range of activities than do IOFs.[10]

Limited Pool of Equity Capital--A major consequence of tying stock ownership to patronage is that the potential pool of equity capital for cooperatives becomes sharply circumscribed. Whereas an IOF can raise additional equity capital by selling stock to the general public, a farmer cooperative can increase its equity base only by convincing existing stockholders to subscribe additional capital or by attracting new farmer-stockholders. Existing members may be reluctant to subscribe additional capital for several reasons. The members may operate under absolute capital rationing, requiring them to invest mostly in their own farm enterprises just to continue operating. Members also may perceive that the return on their investment in the cooperative is lower than in the farm enterprise.[11] This may occur because the member's perception is indeed correct, because the member undervalues investment in the cooperative due to free riding and delays in receiving allocated patronage refunds, or because the member overvalues investments in the farm enterprise, such as overlarge and complex equipment. Attracting new members may be difficult because of geographic limits on the cooperative's scope of operations and because, in certain cooperatives, only farmers engaged in particular types of production are admissible as members.

The difficulty in raising equity capital, combined with the "horizon problem" (discussed later), may restrain farmer cooperatives from entering certain highly capital-intensive areas of agribusiness, such as farm machinery manufacture and sales, in which one would otherwise expect them to play an important competitive yardstick role (Rhodes; Heflebower). In addition, the difficulty of rebuilding a cooperative's equity base once it has been eroded may make managers of cooperatives (particularly supply cooperatives) reluctant to initiate risky activities such as price wars that might threaten the firm's equity base. In the words of one cooperative manager, "Because equity cannot be enticed into cooperatives, equity is more sacred: it must be guarded more carefully** (van Nostrand, p. 86).

In certain types of marketing cooperatives, however, the common practice of accepting all the raw product that members produce may result in managers having to cut the price of their processed products to move their inventory. The threat that such price cutting poses to the cooperatives' equity base has led many marketing cooperatives to reconsider their policy of providing a "home" for their members' products.

Risk Aversion- -Farmers invest in agricultural cooperatives as a means of strengthening their farm businesses. The investment represents a deepening of the farmers' financial commitment to a particular line of business rather than a diversification of their portfolios. The tying of patronage to stock ownership in cooperatives prevents the stockholding from being handled by specialized agents, such as independent investors in an IOF, who are either more risk-preferring than the patrons or who can spread their risks by diversifying their portfolios (Carson; Condon and Vitaliano). Because the patrons of cooperatives tend to "have all their eggs in one basket,," they may pressure management to adopt more conservative business strategies than those of competing IOFs. This is particularly true because farmers' investments in

their cooperatives are largely sunk whereas owners of an IOF can "bail out" if the IOF's investments begin to sour. Furthermore, because of the immobility of cooperative capital previously discussed, it is more difficult for cooperatives than for IOFs to spread their risks by diversifying into totally unrelated activities; hence, management itself may prefer more conservative business strategies. Consequently, farmer cooperatives may be more risk-averse than their IOF competitors, particularly if the latter are divisions of large diversified firms.[12]

Better Information Flows and Product Specification--The identity of the patron with the stockholder in cooperatives may lead to better information flows between patrons and management and better product specification. Part of the supply cost of a product is the cost of determining the characteristics of the product desired by patrons. This cost may be lower in cooperatives because they often are structured in a way that makes it easier to collect such information. Unlike many IOFs, a cooperative usually has a list of its patrons and may be able to collect a substantial amount of information about their production practices and needs by asking the members to fill out questionnaires on joining the organization and through periodic member surveys. The members may give more truthful information to the cooperative than they would to an IOF because as stockholders they are more assured that the cooperative will not use the information to act opportunistically toward them.[13] Furthermore, members of cooperatives have more channels open to them to communicate their desires to the firm than do customers of an IOF. In addition to the firm's management and customer representatives, cooperative patrons have access to the firm's formal governance structure through the board of directors. Exercising "voice" therefore may be cheaper for patrons in a cooperative than in an IOF (Hirschman).

Greater Loyalty of Patrons--Because the patrons of cooperatives are stockholders who may have substantial investment in the company, they may be more willing than customers of an IOF to continue to patronize the same firm even though competing firms offer goods and services on more favorable terms in the short run. This willingness to stick with the cooperative even though there exist short-run incentives to defect is commonly termed "cooperative loyalty." Such loyalty is not irrational; it reflects the members' belief that: (a) The short-run performance of the cooperative can be improved if members stay with the organization and work to remedy the problems; and (b) Even though there may be short-run incentives to patronize the cooperative's competitors, in the long run the discounted net benefits from patronizing the (improved) cooperative are greater than those available from alternative sources. These net benefits not only include direct monetary benefits but also the option-demand benefit of having a market alternative to IOFs and the public-good benefits generated by the cooperative, which would be lost if members abandoned the organization. Loyalty can help generate monetary benefits to the members by improving the cooperative's ability to project demand, thereby reducing inventory costs and facilitating the planning of new facilities.

One element that strongly influences a member's view of whether there are long-term monetary net benefits from continuing to patronize the cooperative

is whether the rate of return on the member's investment in the cooperative appears to be contingent on continued patronage. This rate of return has two components: the return of capital, that is, the recovery of the initial investment; and the return on capital, that is, the additional net earnings engendered by the investment (Gittinger, p. 66). In an agricultural cooperative, the return of capital, in an undiscounted sense, depends on the cooperative's equity redemption program. The return on capital is derived through patronage, through limited interest payments on capital invested in the organization, and through the cooperative's provision of public and semipublic goods, such as lobbying. The current return gained through patronage is represented by the difference between the cooperative's prices (net of any patronage refund) and those of competing IOFs, appropriately adjusted to take into account any quality differences between the goods and services available from the cooperative and those available from the IOFs.

If the cooperative's net prices are less favorable than those of competing IOFs, if the rate of interest paid on capital invested in the cooperative is less than the member's opportunity cost of capital (as it usually is), and if it is possible to act as a free rider with respect to the cooperative's provision of public and semipublic goods, then the individual member's short-run return on capital invested in the cooperative is negative. Even though the competitors' prices may be as low as they are because of competitive pressure from the cooperative, the individual cooperative member has no incentive to take this into account if it is believed that patronage decisions do not affect the viability of the cooperative. If the member believes that the speed with which cooperative equities will be retired does not depend on continued patronage, then the perceived return of capital is unaffected by patronage decisions. Given these conditions, there is no reason, based on current financial considerations, for the cooperative member to be any more loyal to the firm than is the customer of an IOF. If the member's perceived rate of return on investment in the cooperative is negative or is not contingent on continued patronage, the member may rationally regard the investment as a sunk cost and therefore not take it into account in making current patronage decisions.

This situation is most likely to occur if the cooperative has an open membership policy and if the member believes that market prices will be unaffected by patronage decisions. Given these conditions, a member who does not patronize the cooperative in the current year can freely patronize it in succeeding years if the cooperative's prices or services become more favorable, and the member believes that the patronage decision in the current year will not affect the future prices offered by either the cooperative or competing IOFs. The member will therefore base current patronage decisions solely on current prices.

If, on the other hand, exit from and reentry into the cooperative is costly or if the member believes that current patronage decision will materially affect future prices (e.g., by weakening the cooperative's ability to enforce workable competition or by denying the cooperative the volume it needs to achieve economies of size), then in making patronage decisions the member has to consider not only current prices but expected future prices as well. Here the role of member expectations becomes important in determining cooperative

loyalty. Older members who have vivid memories of what marketing conditions were like before the cooperative existed may be more loyal to the organization than are younger members. The older members may believe that IOFs, unencumbered by competition from a strong cooperative, would offer very unfavorable prices to farmers; younger members may be less sanguine about that conclusion. To the extent member relations programs and other attempts to instill "cooperative ideology" in the membership change members' beliefs about the importance of cooperatives as *'competitive yardsticks," they may therefore affect member loyalty. Even so, members still may have incentives to free ride with respect to the cooperative's competitive yardstick activities, relying on other members' patronage to keep the cooperative strong enough to compete effectively with IOFs.

The preceding analysis suggests that member loyalty will be greater in those cooperatives that make a member's rate of return on investment in the cooperative contingent on continued patronage. In cooperatives maintaining a revolving fund for equity redemption, this could be accomplished by giving priority among nonretired members to the revolvement of equities belonging to those who maintain their patronage. The analysis also suggests that loyalty will be lower where the costs of switching patronage are low. In this sense, the Rochdale principle of completely open membership (with its attendant implication that no penalties should exist for switching patronage back and forth between cooperatives and IOFs) may hinder the viability of cooperatives.

Other Pressures on Management[14]--Implicit in the discussion of many of the preceding issues was the notion that managers in farmer cooperatives face different types of pressures from the stockholders than do managers of IOFs. Because the stockholders of a cooperative are the firm's patrons, there are pressures on cooperative managers in addition to those previously outlined. For example, the stockholder-patrons of a cooperative are intensely interested in technical aspects of the firm's products and services (e.g., the composition and quality of the fertilizers it sells) as these affect the profitability of the members' farming operations. Shareholders therefore may demand that their manager be fairly conversant in technical matters as opposed to being solely a financial expert, as is often the case in IOFs. Whereas IOF customers who are interested in the technical characteristics of the firm's products can be referred to the firm's technical staff, cooperative shareholders may have greater power to demand to talk to "the guy at the top."[15]

In addition, because many managerial decisions that would be considered merely strategic in IOFs have important effects on the distribution of income among the stockholders in a cooperative, managers of cooperatives may be called on much more frequently than their IOF counterparts to justify these decisions to stockholders. Because the stockholders frequently may disagree among themselves about what the proper decision should be, the manager may face discontented stockholders no matter what he or she decides. If stockholder disagreements become extreme, the manager may have to play the role of peacemaker among the stockholders to hold the firm together. All this implies that managers in cooperatives "are more interdependent and interactive with user owners and execute more interpersonal and leadership

roles" than their IOF counterparts (Perraut, p. 94). Much of the time of cooperative managers, particularly those of large, diversified cooperatives, may be spent on member relations. This perhaps puts these organizations at a competitive disadvantage because their chief executive officers have less time than IOF managers for strategic planning and administration.

Behavioral Differences Due to the Return on Investment Being Gained Through Patronage

As mentioned in the beginning of this paper, there are three reasons why the benefits a stockholder receives from committing capital to a cooperative are largely tied to patronage:

1. The cooperative pays a strictly limited dividend on equity capital invested in the organization.

2. Net margins are distributed according to patronage rather than equity ownership in the firm.

3. Cooperative stock does not appreciate because of a limited or nonexistent secondary market for it.

This section examines how these three factors combine to affect the behavior of cooperative participants.

Tendency to Underfinance the Cooperative--To the extent that farmers invest in an agricultural cooperative to obtain the right to patronize the firm, they view the value of their investment in the cooperative as instrumental, depending not on their capital's productivity in the cooperative per se, but on how that productivity accrues to the members through patronage. If the cooperative pays no dividend on invested capital, that is, if members derive benefits from the cooperative solely through patronage, then as long as it is profitable for a farmer to patronize the cooperative, he or she can raise the return on capital invested in the organization by increasing patronage relative to their investment.[16] If left unchecked, this incentive to increase patronage relative to capital investment would lead to severe underfinancing of the cooperative. Members would contribute only enough capital to gain the right to patronize the cooperative and then expand their patronage as long as it was profitable to do so. The rest of their capital would then be available for investment in their farm enterprises or in other ventures (cf. Murray 1983a, 1983b, 1983c). To prevent members from behaving in this way, cooperatives have developed mechanisms such as capital retains, base capital plans, substantial "up-front" entry capital contributions, and the withholding (allocation) of patronage refunds, that attempt to force members to align their capital contributions with their patronage.

Payment of dividends on capital also increase a member's incentive to invest in the cooperative. However, if members differ in the amount of capital they have invested relative to their patronage, the setting of the dividend rate is likely to be a contentious issue. Members who are "overinvested" (i.e., who have contributed more capital relative to their current patronage than the average member) benefit financially from a high dividend rate, while

"underinvested" members prefer a low rate (Staatz 1984, pp. 92-93). The development of mechanisms such as base capital plans that attempt to align capital contribution to patronage can therefore be seen as an attempt by the cooperative to reduce conflict in the organization over payments to capital as well as an effort to assure adequate capital retention to finance growth.

The Lack of a Secondary Market for Cooperative Stock--Although a number of authors have discussed how the absence of a secondary market in ownership rights affects the behavior of participants in worker-managed firms, only a few (e.g., Condon and Vitaliano) have attempted to extend that discussion to farmer-owned cooperatives. Secondary markets for the equity certificates of a few cooperatives exist, but for a number of reasons such markets are not common (see Staatz 1984, pp. 94-96). Discussions with participants in farmer cooperatives suggest that the lack of such markets has several important consequences.

A stock certificate of an IOF confers to the holder a residual claim on the earnings of that firm in perpetuity. A well-functioning secondary market will therefore value the stock in terms of the expected present value of the firm's future net earnings. At any time, stockholders can realize- the capitalized value of those future earnings by selling the stock. Actions that increase the firm's future earnings potential raise the value of the stock, allowing stockholders to capture capital gains. The access to these capital gains via the secondary market gives stockholders a strong incentive to be concerned about the future earnings as well as the present earnings of the firm.

A stock certificate of a farmer cooperative, in contrast, grants to the holder a residual claim on the earnings of the firm only so long as he or continues patronage. Depending on the equity retirement policies of the cooperative, the stock certificate may also confer a fixed claim to the member's original investment in the cooperative, usually payable in nominal terms after several years. Because there is no secondary market for the stock, increases in the cooperative's future earnings capacity do not affect the value of the cooperative's stock. The absence of a secondary market prevents the stockholder from directly realizing, at any time, the full share of the expected present value of the cooperative's future income stream.

If belonging to a cooperative increases a farmer's future on-farm earning capacity, the farmer may, in the current period, be able to realize some of the future value of the cooperative's activities by borrowing against future farm earnings. This often is a poor substitute for a secondary market in the cooperative% stock, however, because lenders base their loans to the member not on the expected present value of the cooperative's future earnings over the cooperative's lifetime, but only over the period during which the farmer is expected to be an active member. If the farmer is close to retirement, he or she may be able to tap only a small percent of accrued investment in the cooperative through the capital market.

As a result of the illiquidity of cooperative stock, shareholders in cooperatives are forced to obtain most of their ownership benefits via current patronage. This may lead members to pressure the cooperative to

increase current earnings at the expense of future earnings. Members may be reluctant to finance long-term investments by the cooperative if they believe that these investments will generate most of their benefits after the current members have retired. One would therefore expect older members, in particular, to pressure management to increase current earnings, even if this involves liquidation of some of the firm's assets.[17]

Observers of the labor-managed firm have identified this tendency to emphasize current cash flow at the expense of future earnings as a major problem in worker-owned firms, labeling it "the horizon problem" (Jensen and Meckling; Condon and Vitaliano; Furubotn). In a farmer cooperative, the horizon problem may be manifested by members pressuring management to:

1. Increase the proportion of the cooperative% cash flow devoted to current payments to members relative to investment (e.g., pressuring the management of a marketing cooperative to have a large "cash payout" or pressuring the management of a supply cooperative to enter into price wars with competitors, even if such cutthroat competition impairs the long-term viability of the cooperative).

2. Speed up equity retirement programs and increase the dividend paid on capital invested in the organization, both at the expense of retained earnings. (As previously pointed out, higher dividend rates will be favored only by members who are "overinvested" in the cooperative and will be opposed by "underinvested" members, who prefer that most of the cooperative's cash flow be devoted to benefits that are distributed according to patronage.)

3. Liquidate the cooperative's assets, in whole or in part. Pressures for total liquidation may be muted by provisions in most state incorporation statutes that specify that in the case of total liquidation a cooperative's assets must be distributed among past as well as current patrons. Pressures for a partial liquidation of the firm's assets, however, may remain.[18]

Several mechanisms may partially substitute for a secondary market in cooperative stock, thereby attenuating the horizon problem in farmer cooperatives.[Es] If cooperative membership can be sold with the farm, then the expected future earnings of the cooperative will be capitalized into the value of the farm and the horizon problem will be largely overcome. Such effective salability of cooperative membership could be achieved if the farm were incorporated and the corporation, rather than the farmer who owned it, was the member of the cooperative. A change in the ownership of the corporation, by itself, would not change the corporation's status as a member of the cooperative (Baarda). Similarly, if production quotas or contracts of a processing cooperative are tradeable, then the value of the cooperative will be capitalized into their price, providing de facto salability of membership.

Even if membership in the cooperative cannot be transferred, if the cooperative has a completely open membership policy, then the value of the cooperative will be fully capitalized into the value of the farm. If

membership is not fully open but the probability of gaining membership is higher if one buys the farm of a member (e.g., if the cooperative restricts membership to a certain geographic area), then the discounted value of the cooperative's future earnings will be partially capitalized into the farm's value. If the cooperative, through its competition with IOFs, leads to higher farm product or lower farm input costs in the area, then the present value of the cooperative's future activities also will be partially capitalized into the value of both members' and nonmembers' farms.[20]

The horizon problem also may be attenuated if members derive satisfaction or a higher retirement income from bequeathing a more viable farming operation or structure of agriculture to their heirs or community. For example, if the cooperative permits members to transfer membership intergenerationally within families, older members may be willing to help finance long-term investments in the cooperative even though these members will not directly benefit from the investments. The older members may derive satisfaction from knowing that their heirs will have access to a strong cooperative and may feel as though they are repaying a debt to their predecessors who acted similarly. Such behavior may be reinforced if the retiring members' heirs have agreed to support the retirees in their old age. In this situation, the size of the retirees' *'pension" is dependent on the farms' future financial performance. To the extent that the cooperative, through various socialization processes like member relations programs, can convince members to generalize their "feelings of family" to the entire membership of the cooperative, the horizon problem may be reduced even more. Such a generalization is more likely to occur in small cooperatives where the members know each other well than in organizations with large, diverse memberships.

The'foregoing analysis suggests that the horizon problem may be more serious in cooperatives with the following characteristics:

1. The per-member capital investment in the cooperative is large;

2. The cooperative has a closed membership;

3. Few of the member firms are legally incorporated;

4. The intergenerational transfer of membership within families is prohibited; and

5. The cooperative has a large, diverse membership.[21]

On the other hand, in smaller cooperatives, especially those in which the members have strong ties to one another (e.g., because of a common religion or set of social beliefs) and in which there is a strong tradition of family farming, the horizon problem may pose fewer difficulties.

The preceding discussion implicitly assumed that management faithfully implemented the members' desires. To the extent that management is interested in growth of the cooperative, however, its interests are opposed to those of members seeking to decapitalize the firm. Ironically, if management is successful in pursuing its own goals of growth rather than the

goals of the membership, the manager may act as the guardian of the cooperative's long-term viability. If, as suggested by some authors (e.g., Staatz 1984; Murray 1983a, 1983b, 1983c), management has more leeway to pursue its own goals in large, diversified cooperatives, the importance of the horizon problems in such organizations may be reduced.

Because cooperative certificates generally are not redeemable via a secondary market, many cooperatives in the United States have committed themselves to retiring member equities via equity redemption programs. Such programs partially address the problem of intergenerational transfer of ownership of cooperatives. In addition, if a cooperative redeems its equities on a regular schedule and members are confident that this will continue, then equity redemption may effectively provide a retired member of the cooperative with a pension (at least for a few years) whose payments depend on the financial performance of the cooperative after the member retires. The member therefore has an interest in the long-term viability of the cooperative, which may attenuate the horizon problem.

Systematically retiring member equities places an additional demand on both the cooperative's capital structure and its cash flow. If a stockholder in an IOF redeems his or her ownership right in the IOF via the stock market, the size of the firm's equity remains unchanged; only its ownership changes. Redemption of equities by a cooperative, on the other hand, reduces the firm's equity. As a result, a cooperative that operates a systematic equity redemption program also must systematically acquire new capital from members to maintain the organization% equity structure. Unlike an IOF, which can time the issuance of new stock to coincide with favorable market conditions, the cooperative is forced to obtain additional member capital year-in and year-out, a task that one cooperative manager described as "an onerous obligation.** The difficulty of attracting capital to cooperatives is compounded by the fact that capital contributions are tied to patronage. Therefore, a cooperative usually cannot expand its equity base by simply issuing more stock; it must expand the patronage of current members, attract new members, or obtain additional capital per unit of patronage from current members.

Due to the difficulties of attracting and maintaining capital in a cooperative, managers are under strong pressure to create some form of permanent equity in the firm, for example, through the use of unallocated reserves. Such permanent reserves facilitate long-run planning and give the manager greater flexibility in allocating the firm's resources. This flexibility becomes increasingly important as the membership of the cooperative grows more heterogeneous and different groups within the organization pressure management to respond to their particular interests (Murray 1983a, 1983b).

To the extent that a cooperative systematically retires member equities, equity redemption becomes one of several competing claimants on the firm's cash flow, including:

1. Payments for the firm's inputs purchased from outside the cooperative;

2. Payments for member-supplied inputs;

3. Patronage dividends, in addition to those included in (2);

4. Dividend payments to member capital;

5. Retained earnings;

6. Equity redemption; and

7. Provision of other benefits that are distributed among the members in a manner unrelated to patronage.

Members who have heavily invested in the cooperative and hence have a strong stake in equity redemption (typically older farmers) may therefore find themselves in conflict with "underinvested" members, who prefer that cash flow be devoted to other uses such as increasing raw product prices or lowering input prices. If, as in many agricultural cooperatives, retired farmers are barred from voting, the board may give equity retirement a low priority relative to other uses of cash flow unless these "voiceless" members are successful in bringing outside pressure to bear on the board.[22] Neglect of equity retirement may in turn aggravate the horizon problem.

A common rule for investors in IOFs states, "If you don't like what management is doing, sell your stock." If enough stockholders follow this advice, the value of the stock declines, imposing capital losses on those who bought their stock at a higher price but still hold it. In an effort to recoup those losses or at least avoid further erosion in their asset values, stockholders may coalesce into a bloc that attempts, via a proxy fight, to displace the current management with one more to their liking. Alternatively, outsiders may be tempted to take over the IOF via a tender offer if they believe that the current management is leaving unexploited substantial earning opportunities. In either case, it is not simply the potential of higher future earnings for the firm that induces "renegades*' to try to displace current management. An important added incentive is the knowledge that if the stock market "agrees" with the renegades' analysis, those who initiated the takeover will be rewarded with substantial capital gains, as the market will capitalize the increase in expected future earnings into the value of the stock (Alchian and Demsetz).

Fluctuation in the value of an IOF's stock therefore serves as an important disciplining mechanism on management, indicating the degree of stockholder satisfaction with current managerial policies. Many firms reinforce the potency of this disciplining mechanism by offering stock options to top management, which makes the earnings of these personnel contingent on the stock's value. Tying the manager's earnings to the firm's performance, as judged by the stock market, may thus reduce managerial shirking (Alchian and Demsetz).[23]

The possibility of capturing capital gains or suffering capital losses in the stock market also creates incentives for the development of a specialized market in information about the managerial resources and earnings potential

of publicly traded IOFs. The business press, a consequence of the secondary market for IOF stock, serves as an additional disciplining mechanism on the management of IOFs.

The lack of a secondary market for cooperative stock denies the cooperative these tools for influencing managerial behavior. Cooperative stockholders have no simple indicator like a stock price by which they can evaluate how well management has enhanced the future earnings capacity of their firm. If they evaluate management primarily on the current prices the cooperative charges for its services, the manager may be induced to decapitalize the firm in an attempt to increase current earnings, simply reinforcing the horizon problem.

Denied the stock price and the business press as concise indicators of managerial performance, stockholders in cooperatives have to develop other ways of monitoring managerial behavior, including requiring the board of directors to play a more active role in the firm's affairs. Some of these control mechanisms are discussed later in the section on "democratic control."

The impossibility of benefiting from capital gains in a cooperative also may reduce the incentive to found a cooperative even when the social benefits of doing so exceed the social cost (Shaffer 1982, p. 3). Whereas entrepreneurs who found a successful IOF are rewarded with substantial capital gains as the net worth of the firm increases, the founders of a cooperative cannot benefit from capital gains in the value of the cooperative firm because cooperative stock does not appreciate. Although the creation of the cooperative may substantially improve the profitability of the founders' farm enterprises, these benefits generally are available to all who join the cooperative, not just those who incur the costs of establishing the firm. Therefore, the free-rider problem may reduce individual incentives to start a cooperative even when ample social justification for the cooperative exists. Because of the free-rider problem, there may be a legitimate role for governmental subsidies to encourage the formation of cooperatives.

The Nature of Ownershin in a Cooperative--Much of the preceding analysis suggests that the tying of equity ownership to patronage, the strict limits on dividend payments to equity invested in the cooperative, the distribution of net margins in proportion to patronage, and the lack of a secondary market for cooperative stock combine to result in a fundamentally different concept of ownership in a cooperative than in an IOF (see Shaffer 1983). Indeed, one critic of farmer cooperatives has argued that the term 'cooperative equity capital" is simply "an accounting misnomer for junior, subordinated revolving debt" (Cortopassi).

The view that '*cooperative equity capital" is nothing more than revolving debt implies that there is no true stockholder equity in the organization and raises the question of who really "owns" the cooperative. It is true that except for unallocated reserves, cooperatives rarely have permanent equity; consequently the ownership claim of a cooperative stockholder differs in several ways from that of either a stockholder or a bondholder of an IOF.

Cooperative stock confers a residual claim on the firm's earnings, not in perpetuity, but only as long as the member maintains patronage. It also confers a fixed claim on the firm's cash flow (much like an IOF bond) if the cooperative has committed itself to retiring the equities of "overinvested" members. The residual claim on the firm's earnings usually has very limited transferabililty and, if members are not required to keep their capital contributions in line with patronage, the claim will not be proportionate to investment. The fixed claim on the firm's cash flow is a much less enforceable fixed claim than an IOF debt instrument, such as a bond, because it is subordinate to other cooperative debt instruments and because in most states, cooperatives' boards of directors have the discretion to decide when and if equity certificates are to be retired and what rate of interest, if any, they should earn in the interim (Cobia et al.).

Behavioral Differences Due to Democratic Control

Democratic control of cooperatives has two aspects: limits on voting one's equity (or equivalently, limits on stock ownership) and restrictions on nonmembers serving on the board of directors.

Limits on Voting on the Basis of Equity Ownership--Allocating voting power in a cooperative on a basis other than equity ownership prevents the concentration of nominal political control of the organization in the hands of those who contribute the bulk of the capital. Supporters of cooperatives usually have justified such restrictions on the grounds that they "prevent the domination of capital in the cooperative." This diffusion of political power, however, raises the possibility that a majority of members, who may contribute only a small part of the patronage or capital of the organization, may impose policies that exploit the minority of large patrons (Zusman). The scope for such exploitation is limited by the possibility that large members may withdraw their patronage and take their business elsewhere. Exploitation of the minority by the majority is less feasible where potential market competition is intense (including the possibility of disaffected members setting up their own firms) than where the cooperative holds a secure local monopoly.

Potentially more dangerous is the possibility that the quality of decisionmaking by the board of directors may suffer as a result of this diffusion of political power. If board members believe that they are dependent for their reelection on the mass of small patrons, each of whom has only a small stake in the cooperative's investment decisions, the board may treat those decisions more cavalierly than if voting power were proportional to capital contribution. Limitations on voting one's equity may put nominal control of the cooperative in the hands of those who do not have to bear the full consequences of their decisions, at least in the short run. Again, potential competition limits the extent of such behavior in the long run, as cooperatives that habitually make decisions that alienate members who contribute the majority of patronage and capital to the firm soon lose those members' business. In addition, large patrons may be particularly adept at influencing the board and management through informal channels (Staatz 1984, chap. 6; Bartlett, pp. 130-56).

The diffusion of political power is one reason why coalition building among stockholders usually is much more important in the decisionmaking process of cooperatives than in that of IOFs.[24] Because many of the decisions in cooperatives affect the distribution of income among the members, cooperative stockholders are more likely than their IOF counterparts to seek involvement (e.g., via the board) in deciding a broad range of issues that are considered merely strategic in an IOF. The interests of the members on these issues are seldom homogeneous and, because voting power is not concentrated, simply convincing a few large patrons of the correctness of one's views may be insufficient to ensure that they will prevail.

The need to build coalitions suggests that the transaction costs of reaching decisions may be higher in cooperatives than in IOFs. As a result, cooperatives may be less able to react quickly to market opportunities than are their IOF competitors. Cooperatives that delegate greater decisionmaking authority to management thus may be better able to compete with IOFs, albeit at the cost of less direct member involvement in decisionmaking. In delegating decisionmaking authority to management and the board, cooperative members have to balance the reduction of transaction costs against the risk that management and the board may act contrary to the members' wishes. Because the cost of group decisionmaking is likely to increase with the size and diversity of the group, the proportion of decisions delegated to management and the board probably is higher in large, diverse cooperatives than in small, homogeneous ones.

The diversity of member views and the need to build coalitions suggest that logrolling (tying the negotiation of one issue to another) may play an important role in cooperatives. Given divergent member preferences, logrolling can expand the scope for agreement (Raiffa). It also reduces the predictive power of models of cooperative behavior that assume that members vote on each decision independently.

Limits on Nonstockholders Serving on the Board of Directors--In an effort to ensure "member control," most farmer cooperatives prohibit or severely restrict nonstockholders from serving on the board of directors. This is particularly true of local cooperatives; federated regional cooperatives sometimes permit managers of locals to serve on the board of the regional. In addition, some state cooperative incorporation statutes provide for public representation on cooperative boards.

The board members of a farmer cooperative are users of the firm's services; hence, they bring two sets of concerns to the board: owner concerns and user concerns. Owner concerns revolve around the security and overall profitability of the stockholders' investment in the cooperative. User concerns include issues of product quality and the pricing of member services, which affect the profitability of the cooperative to the individual user. Because of the limitation on dividend payments and the stockholders' inability to capture capital gains in a cooperative, user concerns are likely to attract much of the board's attention. Unlike an IOF board, which functions primarily as a trustee of the stockholders' investment, a cooperative board serves as both a trustee for the investors and a

representative of the firm's patrons, providing an important channel by which user concerns can be conveyed to management.

Because members of the board are users of the firm's services, they may bring to the board some of the technical knowledge about the firm's services and operations that "inside directors" provide in IOFs. If the cooperative's operations are complex or extend far beyond the farm, however, it is likely that farmer directors will lack the expertise in marketing, manufacturing, or retailing that inside and outside directors could provide. This leads to a dilemma in farmer cooperatives: To the extent that farmers participate in leadership roles in the board, they may contribute to poor decisions and hamstring management; to the extent that they do not participate, ownership is separated from control (Helmberger, p. 1431).

Restricting board membership to stockholders limits the pool of potential directors. If board member skills are a scarce commodity, one can well imagine an inverted U-shaped curve relating average effective member control, as exercised through the board, to the number of members in the cooperative. In small cooperatives, the pool of board member talent may be so limited that it is difficult to constitute a board that can effectively monitor managerial behavior. Managers in these small cooperatives may therefore "run the show." As a cooperative becomes larger, the pool of board member talent expands, allowing selection of a board that can play a more active role in the cooperative's decisionmaking. At some point, however, a cooperative may become so large and complex that no part-time board, no matter how talented-, can fully monitor managerial behavior. Management in these large cooperatives may therefore have considerable scope to pursue its own goals.[25]

Cooperative boards of directors not only have a different structure than IOF boards, but for several reasons they also typically play a much more active role in their firm's decisionmaking than do IOF boards. First, as discussed before, cooperative stockholders are intensely interested in issues such as price setting that in an IOF would be left entirely to management. Second, the difficulty in cooperatives of devising simple indicators of managerial performance and automatic incentive systems (such as stock options) leads to the need for greater direct monitoring of managerial behavior by the board. Stockholders in a cooperative are interested in many facets of the firm's performance beyond just net margins. A board that evaluated its manager solely on the basis of net margins would give the manager an incentive to raise the price of member services and run the cooperative as a separate profit center rather than trying to coordinate the cooperative's operations with those of its member firms. Similarly, evaluating the manager's performance based solely on the current price of member services could exacerbate the horizon problem and lead to member conflict over which services should have their prices discounted the most. Rather than focus on any one indicator of the manager's performance, the board has to balance several aspects, which may change as the distribution of power among the membership changes. Doing so requires the board to be more integrally involved in the affairs of the firm than is the board of an IOF.

The lack of a secondary market for cooperative stock makes it difficult for farmers who have a substantial investment in the cooperative to exit the organization. Even if they quit patronizing the cooperative their capital is still committed to the firm. Large patrons' limited ability to exit the organization may lead them to pressure the board to be more directly involved in the affairs of the firm. Because these stockholders cannot discipline the manager by immediately withdrawing their capital from his or her control, they are forced to rely more on member voice to convey their concerns to management (Hirschman). In this process, the board serves as their mouthpiece. Members who have only a small investment in the cooperative, on the other hand, may find exit much easier, particularly if the cooperative has several competitors. Such members may simply leave management of the cooperative to the managers and rely mainly on exit to discipline managers who get out of line.

Conclusions

Cooperative theorists have long debated how the behavior of farmer cooperatives varies from that of IOFs. Much of the theoretical literature begins by hypothesizing a particular objective function for cooperatives and then shows how striving to maximize that function leads to behavior different from that of a profit-maximizing IOF (LeVay). The approach taken in this paper is more structuralist: It argues that, regardless of objective functions, the unique structural characteristics of cooperatives may lead them to behave differently from IOFs.

The structuralist approach is not new. Several authors (e.g., Kravitz) have argued that as farmer cooperatives grow into large corporations, their behavior often becomes indistinguishable from that of IOFs. This paper has shown, however, that structure involves more than just size. The patron-stockholder identity, the distribution of ownership benefits through patronage, and the democratic governance of farmer cooperatives can all lead farmer cooperatives to behave dissimilarly from IOFs. Some of the differences in behavior may be highly beneficial for the cooperative and its members while others may hinder its performance. For example, the flow of information between patrons and the firm may be better in cooperatives than in IOFs, which can lead cooperatives to be more responsive to farmers' needs. On the other hand, cooperative capital may be less mobile than that of IOFs, and there may be serious problems in inducing cooperative stockholders to act in the long-term interest of their firm. As a result of these differences, the roles and behavior of cooperative managers and board members may vary markedly from those of their IOF counterparts.

Not all of the hypotheses raised in this paper are mutually consistent. For example, the paper argued that the limited ability of cooperatives and cooperative stockholders to diversify their investments may lead cooperative decisionmakers to be more risk-averse than decisionmakers in IOFs. On the other hand, the horizon problems may give stockholders incentives to push their cooperatives into reckless price wars in an effort to increase the members' current return from the organization in the form of more favorable short-run member prices. While the paper outlines some of the possible

behavioral differences between farmer cooperatives and IOFs, determining the relative importance of these will require more empirical research.

Notes

1. The frequently mentioned cooperative principle of *'service at cost" is subsumed under this characteristic. How the cooperative defines its costs and the level of those costs are obviously important in determining what *'service at cost" really means. *'Service at cost" does not always mean "service at minimum cost." In practice, some farmer cooperatives also distribute net margins to nonmembers as well as to members. The description in the text refers to an archetypical cooperative.

2. In this paper the term "stock" includes all forms of ownership claims on the cooperative (e.g., retain certificates, revolving fund certificates, and patronage refund certificates), not just common and preferred stock.

3. Peter Vitaliano, in his review of an earlier draft of this paper, stressed the diffuse nature of optimization in a cooperative.

4. See the section "More Diffuse Scope for Optimization: Pooling Issues and Income Distribution."

5. For an analysis of how cooperatives' tax status affects the income of members in different tax brackets, see Schrader and Goldberg, pp. 34-44.

6. Subsidizing the price of production inputs sold to members would not reduce the members' income tax liability because the cheaper inputs would result in higher farm profits.

7. See Staatz, "A Game-Theoretic Analysis of Decisionmaking in Farmer Cooperatives," in this volume.

8. For a discussion of this problem in cooperatives, see Savage.

9. See Staatz, "A Game-Theoretic Analysis of Decisionmaking in Farmer Cooperatives,*' in this volume.

10. This is not to deny that cooperatives sometimes use cross-subsidies to gain market share. For example, many dairy cooperatives use hauling rate subsidies on the fringes of the cooperatives' geographical areas to expand membership. The argument presented here is simply that the scope for cooperatives to use cross-subsidies is much more limited than for IOFs. For a game-theoretic analysis of the limits to cross-subsidization in cooperatives, see Staatz, "A Game-Theoretic Analysis of Decisionmaking in Farmer Cooperatives," in this volume.

11. Although stockholders in a cooperative derive their financial benefits largely through patronage, not from a direct return on investment in the form of dividends and capital gains, it is still legitimate to speak of

a farmer's return on investment in a cooperative. When deciding whether to commit capital to the cooperative, either through initially joining it or through continuing to patronize it (which often requires incremental purchases of cooperative equities, e.g., through per-unit retains), the farmer compares the benefits derived from this use of capital to the benefits derived from investing it elsewhere, such as on the farm. The return on the investment in the cooperative is indirect, being gained through patronage, but it is still a return on capital in the sense that without a commitment of capital, the stockholder cannot receive the benefit. The return on capital, however, also requires a commitment of patronage, and in this sense is different from the return on investment in an IOF. In those cooperatives that extend patronage refunds to nonmembers, the return on the investment required to join the cooperative is limited to the dividend paid on that capital and the other benefits of membership, such as voting rights.

12. Dunn, Ingalsbe, and Armstrong report that in general farmer cooperatives tend to be less diversified than the IOFs with which they compete (p. 245).

V. James Rhodes, in his review of an earlier draft of this paper, pointed out that farmers are reluctant to allow their cooperatives to diversify into businesses unrelated to farming because the farmers' investment in the cooperative is largely sunk. For activities unrelated to farming, the farmers can get the same investment service from an IOF investment firm and have far greater liquidity of investment than they would through a cooperative. Only when the cooperative provides services that strengthen the farming operation and that are not available through IOFs are farmers willing to accept the illiquidity that accompanies investment through a cooperative.

13. Some incentives for dissembling may remain, depending on how the members believe the costs of developing and producing new products will be shared among the members of the cooperative. For example, consider corn farmers who are members of a supply cooperative whose patrons include producers of many different commodities. If the corn farmers believe that because of the cooperative's cost-sharing practices the cost of developing an improved corn herbicide would be borne by all the members, the corn producers have an incentive to overstate their need for such a product because they would have to pay only a fraction of the cost of its development.

14. This section draws heavily on Perraut.

15. The smaller emphasis given to financial expertise among cooperative managers also is due to several other factors. Raising capital in cooperatives is not a specialized activity like in IOFs; it is a byproduct of patronage, which requires favorable pricing, successful member relations, etc. In addition, in many countries, cooperatives raise debt capital through specialized agencies like the Banks for Cooperatives, which often assume many of the financial management functions that in IOF are normally carried out by the firm's management;

hence, cooperatives have less need for financial expertise. In addition, stockholders of cooperatives may put little pressure on management to develop financial expertise because cooperative stock does not appreciate; therefore, the stockholders cannot capture capital gains, the magnitude of which in an IOF often depends on the management's financial prowess.

16. For a proof, see Staatz 1984, p. 91.

17. This assumes that the members act entirely selfishly. Concern about bequeathing a viable farming operation to one's heirs or community may attenuate this conclusion. This is discussed later.

18. For example, the manager of a major agricultural processing cooperative told the author that one board member (who had recently joined the cooperative) had proposed selling one of the cooperative's brand names, which had an estimated market value of $30-$50 million, to an IOF. The member reasoned that the terms of sale could specify that the cooperative would sell its raw agricultural product to the IOF at little reduction in the present field price, and the sale would allow current members to capture the $30-$50 million as current income. Management resisted the suggestion on the grounds that it was unfair to previous members of the cooperative, who, over 65 years, had built up the value of the cooperative's brand name but would not share in the proceeds of the sale.

19. Some of the following points have been discussed by Condon and Vitaliano, pp. 38-42.

20. The higher farm values will reflect only a partial accounting of the cooperative's future activities because if the cooperative's only benefit were to force IOFs to offer farmers more favorable prices, and these prices were available to both members and nonmembers, nobody would have an incentive to maintain their membership in the cooperative; everyone would try to be a free rider. The existence of the cooperative suggests that it offers members appropriable as well as public goods.

21. See the following paragraph for an important qualification to this last statement.

22. For example, pressure from Congress. The increased attention that farmer cooperatives have paid to equity redemption in recent years is partly attributable to calls in Congress for legislation that would have mandated certain levels of redemption if cooperatives had not improved their performance in this area (see U.S. General Accounting Office).

23. Because of imperfect information, however, the stock price often reflects the short-term performance of the firm more than its long-term potential. Consequently, if an IOF relies heavily on the value of its stock to reward or discipline the manager, the firm may create incentives for the manager to emphasize the company's short-run financial performance at the expense of long-term performance. For

example, managers may manipulate current income statements to misrepresent the condition of the firm or concentrate on other strategic actions, such as takeover bids, to increase the stock value in the short run rather than emphasize increasing the firm's long-run productivity. Such behavior can result in these IOFs facing their own type of horizon problem.

24. A possible exception is during proxy fights and tender offers in IOFs, when coalition building among stockholders often becomes critical.

25. The structure of the cooperative (e.g., its complexity) may be more important than size per se in determining the degree of member control. For details, see van Ravenswaay.

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