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## **INVESTMENT CONSTRAINTS IN AGRICULTURAL COOPERATIVES: THEORY, EVIDENCE AND SOLUTIONS**

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### **Investment Constraints in Agricultural Cooperatives: Theory, Evidence and Solutions**

**Grupo de Pesquisa: Instituições e Organizações na Agricultura**

#### **1. INTRODUCTION**

Historically, agricultural cooperatives have played an important economic role in providing market access and competitive returns to independent producers in developed countries. In recent years, however, the restructuring of cooperatives through bankruptcies, liquidations, sales, or conversions to corporations have increasingly appeared in business media headlines. These recent “cooperative failures” have led some scholars and industry leaders to question the future viability of the cooperative form of business.

Notwithstanding the multitude of “daunting” internal challenges faced by cooperatives (USDA, 2002), it has been suggested that investment constraints are the “Achilles’ heels” of cooperatives in an increasingly concentrated, tightly coordinated, and capital-intensive food system (Vitaliano, 1983; Cook, 1995). According to the cooperative financial constraint hypothesis, agricultural cooperatives are unable to acquire sufficient risk capital to finance profitable investment opportunities. As a result, cooperatives may be insufficiently capitalized to make the necessary investments to grow and remain a viable organizational form.

The purpose of this study is to examine the issue of investment constraints in agricultural cooperatives. First, the paper discusses the nature of financial constraints in traditional agricultural cooperatives. It is argued that financial constraints are largely related to the incentive system inherent in the vaguely defined property rights structure of

cooperatives. Second, the study provides a critical analysis of empirical studies that focus on testing the cooperative financial constraint hypothesis. Third, the paper analyzes organizational changes that agricultural cooperatives have adopted to ameliorate perceived investment constraints. In particular, we present a typology of non-traditional cooperative structures based on the property rights theory of the firm. Finally, concluding remarks address the future of the traditional cooperative structure.

## **2. THE NATURE OF INVESTMENT CONSTRAINTS IN THE TRADITIONAL COOPERATIVE STRUCTURE**

Financial management issues – in particular, acquiring and redeeming members’ equity capital – are identified in the literature as major constraints to cooperative organization growth and sustainability (DeLoach, 1962; Furubotn and Pejovich, 1972; Murray, 1983; Caves and Petersen, 1986). Additionally, the “offensive” competitive strategies currently being pursued by agricultural cooperatives in response to structural changes in the food system – including value-added processing, brand name development, and entry into international markets – require substantial capital investments (Cook, 1997; Nilsson, 1998; Hackman and Cook, 1998). In order to acquire the necessary risk capital to implement these growth related strategies and remain a competitive organizational form,

traditional agricultural cooperatives must be able to solve their financial problems related to both the acquisition and sustainability of their equity and debt capital structure.

The capital constraint hypothesis in user-owned organizations – that is, their inability to acquire sufficient risk capital to finance investment opportunities – is usually explained on the basis of the following arguments: (1) Cooperative residual claims are restricted; (2) Cooperative members do not have appropriate incentives to invest; (3) Equity capital acquisition in traditional cooperatives is tied to member patronage (with consequent dependence on internally generated capital); (4) Cooperative equity capital is not permanent; and (5) Cooperatives have limited access to external sources of funds.

### **2.1. Restrictions on Cooperative Residual Claims**

The first argument supporting the capital constraint hypothesis is cooperatives have restricted residual claims (Fama and Jensen, 1983 a,b) as a consequence of regulatory and doctrinal impositions that they be farmer owned and controlled organizations (Condon and Vitaliano, 1983). In other words, the user-ownership principle limits the extent of agent markets for risk bearing and capital provision since only active members may provide the cooperative organization with voting equity capital. As a result, risk capital acquisition in the traditional cooperative firm is limited by the number, the wealth, and the risk bearing capacity of its current members. Yet the pool of potential equity capital suppliers to cooperatives is decreasing as the farm sector consolidates into fewer farms and cooperative memberships decrease as a result. Additionally, as net farm income becomes more volatile and increasingly dependent on Government support programs producers are less prone to invest in their farm operations and cooperatives (Calomiris, Hubbard and Stock, 1986; Gardner, 2000). More importantly, farmers face their own financial constraints due to imperfections in agricultural credit markets (Stiglitz and Weiss, 1981). The empirical evidence is largely corroborative of the presence of credit constraints in U.S. production agriculture (Hubbard and Kashyap, 1992; Bierlen and Featherstone 1998; Bierlen, Barry, Dixon and Ahrendsen, 1998; Barry, Bierlen and Sotomayor, 2000). Nevertheless,

investments in cooperatives have remained relatively stable at 3.5 percent of total farm assets since 1985.

Another restriction on cooperative residual claim rights is their lack of alienability. Residual claims to the firm’s net cash flows are non-transferable in traditional cooperatives. Residual claim non-transferability prevents the functioning of a secondary market for cooperative equity securities. Voluntary contractual restrictions on residual claim alienability are not efficient in organizations where the “capital value problem” is important, that is, when productive activities are supported by large quantities of long-term assets that are difficult to value (Fama and Jensen, 1985). The authors hypothesize that reorganizations are likely to occur due to changes in the nature of these activities that increase capital value problems – for example, “increased demand for wealth from residual claimants to purchase risky assets that are difficult to value, and pressure to transfer the rights to the net cash flows from such assets from one generation of residual claimants to the next” (p. 107).

Increased demand for financing risky assets leads to augmented investment constraints in organizations with restricted residual claims due to three reasons. First, residual claimants would generally prefer to sell part of their residual claims to achieve the risk reduction of a diversified investment portfolio. Second, the implicit price of risk applied by residual claimants in evaluating new project investments tends to exceed the market price of risk used by investors in firms with unrestricted residual claims such as

publicly-traded corporations (also known as investor-oriented firms, IOFs). And third, the contribution of an investment project to the risk of a residual claimant’s imperfectly diversified portfolio is greater than the contribution of the same project to the total risk of capital market participants’ diversified portfolios.

Furthermore, the non-transferability of cooperative residual claims and the resultant lack of a secondary market for cooperative stock lead to the emergence of portfolio and horizon problems. Since members cannot capture the future payoffs of their risky investments in cooperatives due to the horizon problem nor adjust their investment portfolios to match their risk preferences due to the portfolio problem (Jensen and Meckling, 1979; Porter and Scully, 1987), they tend to influence cooperative investment decisions. As a consequence, the market value rule does not necessarily apply to cooperatives and under-investment is expected (Fama and Jensen, 1985).

## 2.2. Member’s Incentives to Invest

A second argument supporting the cooperative capital constraint hypothesis is that the property rights allocation within the traditional cooperative structure does not provide members with the necessary incentives to invest (Vitaliano, 1983; LeVay, 1983; Knoeber and Baumer, 1983; Cook, 1995). Because cooperatives return their earnings to members on the basis of patronage instead of stock ownership, cooperatives generally pay low dividend rates on capital. In addition, residual claims in traditional cooperatives are not appreciable since they are non-transferable and redeemable only at book value. Consequently, members derive benefits from the cooperative mainly through usage in the form of farm gate prices and patronage refunds. “There is a free-rider problem because patrons share in the return on cooperative equity capital whether or not they invest in the cooperative” (Knoeber and Baumer, 1983, p. 31). In other words, members have an incentive to under-finance the cooperative by increasing their patronage relative to investment.

In addition to the free-rider problem, portfolio and horizon problems resulting from the non-transferability of cooperative residual claims further attenuate members’ incentives to contribute risk capital. Cook and Iliopoulos (2000) estimated a latent variable model and found a statistically significant negative relationship between property rights attributes of traditional cooperatives – particularly, open membership, non-transferable residual claims, and lack of marketing agreement – and members’ incentives to invest.

### **2.3. Patronage-Based Equity Capital Acquisition**

As there are few incentives for direct member investment in traditional cooperatives, they ultimately depend on internally generated capital and earnings from non-member business to build a permanent stock of equity capital. In particular, traditional cooperatives rely primarily on patronage-based methods for acquiring risk capital, that is, retained patronage refunds and per unit capital retains. According to Knoeber and Baumer (1983, p. 31), “retaining patronage refunds is a mechanism to overcome the free-rider problem.” Therefore, a producer’s decision to transact with a cooperative is “tied” to the decision to invest in the cooperative’s assets (Peterson, 1992).

Dependence on internally generated capital is not necessarily a handicap to cooperatives given that retained earnings is also the main source of finance in IOFs (Myers and Majluf, 1984). However, the cooperative’s ability to generate earnings might be constrained by two factors: member-patrons are the residual claimants and cooperatives’ market share is low in high margin, value added industries.

Some authors suggest the user-ownership principle may hinder the cooperative’s ability to generate earnings as it strives to maximize returns to members (Staatz, 1987; Parliament, Lerman and Fulton, 1990). In an empirical study of worker cooperatives’ behaviour in the plywood industry, Craig and Pencavel (1992) observe that a cooperative is more likely to adjust earnings to changes in output and input prices than is a proprietary firm. However, the empirical evidence is not conclusive with respect to the relative profitability and economic efficiency of agricultural cooperatives as compared to IOFs operating in the same industry (Schrader, Babb, Boynton and Lang, 1985; Cotterill, 1987; Sexton and Iskow, 1993).

With respect to cooperative low market shares in high-margin industries, Rogers (2001) observes that U.S. agricultural cooperatives have a major presence in low-margin, first-handler markets but only a 5.4 percent average share in all food and tobacco processing industries. The author reports regression results showing that cooperatives’ market share in high value added industries is negatively correlated with the ratio of industry value added to value of shipments. Helmberger (1966, p. 1431) argues this is so because a cooperative may need to forego profitable investment opportunities that are unrelated to members’ current business, whereas “the profit-making firm can cast about in amoebic fashion, assimilating all those opportunities for profit that come its way.”

### **2.4. Non-Permanent Equity Capital**

As a result of the dependence on internally generated capital, approximately 60 percent of equity capital in U.S. agricultural cooperatives is in the form of equity certificates and credits (Chesnick, 2000). In other words, equity capital in a cooperative’s balance sheet generally is allocated to individual members, representing a claim against the cooperative by present and former members who still have retained patronage refunds in the firm. This claim is redeemable, with the ultimate payments to members being at the

discretion of the organization’s board of directors. Because redeeming equity is a cash outlay to the cooperative, a large portion of its equity capital stock is not considered permanent. As a result, “allocated patronage refunds can be viewed as a pool of deferred cash dividends that the cooperative temporarily employs as a component of its equity capital” (Parliament, Lerman and Fulton, 1990, p. 3).

## 2.5. Imperfect Access to External Funds

In addition to being constrained in their ability to acquire and maintain a dependable stock of equity capital, traditional agricultural cooperatives have limited access to outside sources of finance. Because cooperative residual claims are restricted to members and cannot be marketed, access to public equity markets is not a viable option unless the firm changes its organizational form. “A cooperative can raise money in a number of ways. Clearly, it can use retained earnings, or raise the membership fee. It can also issue debt or non-voting equity. What a cooperative cannot do is to sell standard voting equity” (Hart and Moore, 1996, p. 68).

Cooperatives also lack access to adequate sources of debt capital because the “close ties between equity capital and patronage in cooperatives has led traditional lenders to consider cooperative equity capital as insufficiently permanent to support loans” (Vitaliano, 1985, p. 67). Furthermore, the perception that cooperatives are non-profit organizations with an “unorthodox” ownership structure may further restrict access to commercial lenders (Lerman and Parliament, 1993).

Consequently, most agricultural cooperatives do not possess enough net worth or collateralizable assets and “institutional legitimacy” to have adequate access to external sources of finance. This problem led to the creation of the Banks for Cooperatives component of the Farm Credit System providing a dependable source of senior borrowing to agricultural cooperatives at competitive interest rates. Notwithstanding this advantage, cooperatives are found to experience considerably higher after-tax long term borrowing costs than do IOFs as they are excessively exposed to interest rate risk and have restricted access to lower-cost subordinated debt from non-member sources (Vitaliano, 1980).

In conclusion, there are sufficient theoretical reasons to believe that cooperatives may be financially constrained when making investment decisions. As a consequence of the nature of their residual claims, cooperatives are constrained in their ability to acquire risk capital for investment and growth purposes and incur a higher weighted average cost of capital relative to IOFs. That is, the nature of cooperative residual claims is a source of organization inefficiency that undermines the ability of traditional cooperatives to be competitive with alternative forms of business organization in the emerging food system.

Despite the convincing theoretical arguments analyzed above, little is known as to whether agricultural cooperatives actually face binding capital acquisition constraints. In the following section, the available empirical literature testing the cooperative capital constraint hypothesis is discussed and critiqued.

## 3. EMPIRICAL EVIDENCE OF INVESTMENT CONSTRAINTS

Although the theoretical arguments for the existence of investment constraints in cooperatives are persuasive, empirical studies have not found definitive support to the cooperative financial constraint hypothesis. In the extensive applied literature evaluating cooperative performance, we have found growth, financial ratio, economic efficiency, and investment behaviour studies that inform the issue of financial constraints. Growth studies



have found higher growth rates in cooperatives relative to corporations in the 1970s (Chen, Babb and Schrader, 1985) and that the long-run growth rate of seven large North American cooperatives is “low, perhaps even zero” (Fulton et al., 1995). Taken together, these two studies support Caves and Petersen’s prediction that cooperatives are capable of high short-term growth rates that are not sustainable in the long run as a result of equity capital rotation.

In two separate empirical studies, Lerman and Parliament examine the cooperative equity constraint hypothesis by comparing the capital structure of cooperatives relative to corporations. Cooperatives are viewed as “equity bound” and, consequently, are expected to be more leveraged than proprietary firms. Lerman and Parliament (1990) show that median leverage ratios are not significantly different for cooperatives and comparable corporations in the dairy and fruit and vegetable processing industries. Subsequently, Lerman and Parliament (1993) study the financing of asset growth among agricultural cooperatives. Contrary to theoretical expectations, cooperative equity capital is not statistically different from the national average of non-financial corporations. Lerman and Parliament’s results have been confirmed by other studies of cooperative financial performance (Hind, 1994; Royer, 1991).

Another strand of the cooperative performance literature focuses on economic efficiency concepts. By estimating multi-product variable cost functions, Akridge and Hertel (1992), Schroeder (1992), and Featherstone and Al-Kheraiji (1995) have found evidence of excess capacity in agricultural supply and marketing cooperatives. Using different methodological approaches, Sexton, Wilson and Wann (1989) and Caputo and

Lynch (1993) have also detected physical capital overinvestment in a sample of cotton ginning cooperatives. Evidence of overcapacity in cooperatives is hard to reconcile with the financial constraint hypothesis, but the evidence might simply reflect the 1970s agricultural boom when cooperatives had financial capacity to grow by means of borrowed funds. And even though economic efficiency is an appropriate method to assess efficient use of installed capital, it is less suitable to address the dynamic nature of business investment decisions.

On the basis of the available empirical findings it might be concluded that U.S. agricultural cooperatives are not financially constrained – they grow as fast and are as leveraged as comparable IOFs. However, one must be careful in interpreting these results because the applied studies discussed above are not specifically designed to directly test the cooperative capital constraint hypothesis.

As noted by Lerman and Parliament (1993, p. 439), “the observation of high equity financing proportions among the sample of cooperatives does not, however, unambiguously resolve the hypothesis of equity constraints in cooperatives.” Furthermore, the authors suggest future analysis of cooperative growth should attempt to link the investment behaviour of cooperatives with their financial needs in order to shed further light on the hypothesis of capital “starvation” in cooperatives. That is, the methodologies applied in previous research do not account for the financing needs of cooperatives, i.e., the demand for investment funds. Previous empirical studies focus exclusively on the supply of capital and, consequently, fail to address a more fundamental issue – is the supply of risk capital enough to finance the demand for investment funds? In other words, in order to directly address the issue of cooperative financial constraints one needs to control for investment demand in addition to examining the supply of capital.

A more recent study by Chaddad *et al.* (2005) examine the cooperative capital constraint hypothesis with a panel data econometric analysis of U.S. agricultural

cooperatives' investment behavior. Specifically, the authors test whether agricultural cooperatives' investment is constrained by the availability of internal funds by estimating restricted and cash flow augmented Q investment models. In these models, investment demand is measured by the Fundamental q approach (Gilchrist and Himmelberg, 1995). Empirical testing of the cooperative capital constraint hypothesis is based on a firm-level panel data set of U.S. agricultural cooperatives. The data set contains incomplete annual accounting information from 1,271 agricultural cooperatives comprising the years 1991 through 2000. The sample includes local farm supply and grain marketing cooperatives, processing cooperatives with operations in food manufacturing industries, agricultural production and service cooperatives, and cooperatives involved in wholesale trade activities.

It is observed that cooperative investment responds positively and significantly to both the marginal profitability of capital (marginal q) and cash flow. When the cash flow variable is included in the investment equation with marginal q, there is a positive and statistically significant correlation between investment and cash flow for the cooperative sample. In other words, cash flow influences cooperative investment over and above its predictive content about the future profitability of capital. In addition, tests for excess sensitivity of investment to cash flow are extended with the inclusion of interaction terms in the cooperative investment equation. These interaction terms are added to examine whether cooperative structural and financial variables affect the sensitivity of investment to cash flow. It is found that size, credit risk and leverage significantly affect cooperative investment behavior. These results suggest that cooperative managers might be able to

alleviate capital constraints by pursuing growth related strategies while maintaining a conservative capital structure.

To verify the robustness of results, Chaddad *et al.* (2005) repeat the analysis of cooperative investment behavior using only firms in food manufacturing industries. In order to do so, data is collected from publicly traded food manufacturing firms from Standard and Poor's Compustat® database. The unrestricted residual claim characteristic of common stock is the most effective means of “generating large amounts of wealth from residual claimants on a permanent basis” in order to finance organization specific assets (Fama and Jensen, 1983a, p. 312). It is, therefore, reasonable to expect that publicly traded firms be a priori financially unconstrained. The corporations in the sample are larger than the cooperatives in terms of assets, net worth, capital stock, and sales.

The empirical investment model is estimated for corporations and cooperatives separately. Both types of firms respond positively to marginal q as indicated by the positive sign of the estimated coefficient. In other words, food industry cooperatives and corporations invest more when the demand for capital measured by marginal q is larger. The implied adjustment cost parameter is lower for corporations compared to cooperatives, which suggests that corporations react more quickly with investment to exogenous shocks than their cooperative counterparts. The P-value of the marginal q estimate for the cooperative sub-sample is such that a statistical significant influence would be rejected at the 10 percent confidence level. Consequently, the data do not show marginal q to be a strong determinant of investment in the case of food industry cooperatives. Cash flow has a significant influence on investment for cooperatives beyond the indirect influence of marginal q, but not for the case of corporations. In other words, the evidence suggests that cooperatives are financially constrained, whereas corporations are not. Therefore, the comparison of the investment behavior of cooperatives versus corporations provides further support to the cooperative capital constraint hypothesis.



#### 4. SOLUTIONS TO INVESTMENT CONSTRAINTS

Competitive strategies pursued by agricultural cooperatives in response to environmental and structural changes in the food system – commonly referred to agricultural industrialization (Cook and Chaddad, 2000) – require substantial capital investments. These “offensive” strategies include value-added processing, brand name development, and entry into international markets. In order to acquire the necessary risk capital to implement these growth related strategies and remain competitive, agricultural cooperatives are adapting to agricultural industrialization by means of organizational innovations. These organizational innovations include but are not limited to: new generation cooperatives, base capital plans, subsidiaries with partial public ownership, preferred trust shares, equity seeking joint ventures, combined limited liability company-cooperative strategic alliances, and permanent capital equity plans. We assert that the basic issues in examining these new models can be reduced to an examination of ownership and control rights.

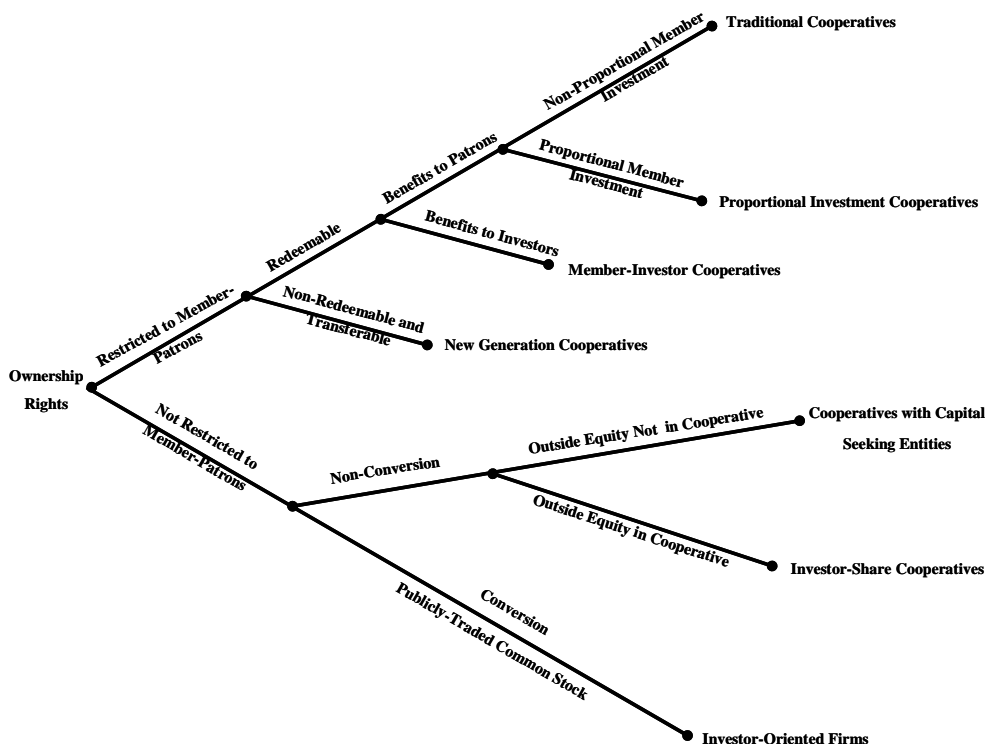
Chaddad and Cook (2004) analyze and characterize these emerging models by describing various organizational attributes including ownership structure, membership policy, voting rights, governance structures, residual claim rights, distribution of benefits and the strategy-structure interface. Building upon property rights and incomplete contracts theories of the firm, the paper adopts a broad definition of ownership rights that encompasses both residual claim and control rights. Alternative cooperative models differ in the way ownership rights are defined and assigned to the economic agents tied

contractually to the firm – in particular, members, patrons, and investors. Based on multiple examples, the paper proposes a typology of discrete organizational models, in which the traditional cooperative structure and the investor-oriented firm (IOF) are characterized as polar forms. Additionally, the authors identify and analyze five non-traditional cooperative models that user-owned organizations may adopt to ameliorate perceived financial constraint problems.

In Chaddad and Cook’s (2004) typology, the traditional cooperative and the investor-oriented firm (IOF) are considered as polar organizational forms (Figure 1). The traditional cooperative structure is defined as having the following property rights attributes: ownership rights are restricted to member-patrons; residual return rights are non-transferable, non-appreciable and redeemable; and benefits are distributed to members in proportion to patronage. As a result of this “vaguely defined” property rights structure, traditional cooperatives are subject to investment and governance constraints.

In addition to these polar forms of organization, Figure 1 identifies five non-traditional cooperative models. In other words, organizational variation is observed in the ownership rights structure of cooperative firms. In doing so, Chaddad and Cook (2004) refine the property rights analysis of alternative organizational forms by identifying five cooperative models that introduce organizational innovations to the traditional cooperative structure. In the upward egressing branch of Figure 1, three non-traditional models with ownership rights restricted to member-patrons are described: proportional investment cooperative, member-investor cooperative, and new generation cooperative.

#### Figure 1. Alternative cooperative models: an ownership rights perspective



In the proportional investment cooperative model, ownership rights are restricted to members, non-transferable, non-appreciable and redeemable, but members are expected to invest in the cooperative in proportion to patronage. Proportional investment cooperatives

adopt capital management policies to ensure proportionality of internally generated capital including separate capital pools and base capital plans. In member-investor cooperatives, returns to members are distributed in proportion to shareholdings in addition to patronage. This is done either with dividend distribution in proportion to shares and/or appreciability of cooperative shares. In the new generation cooperative model, ownership rights are in the form of tradable and appreciable delivery rights restricted to current member-patrons. In addition, member-patrons are required to acquire delivery rights on the basis of expected patronage such that usage and capital investment are perfectly aligned.

In the downward egressing branch of Figure 1, ownership rights are not restricted to member-patrons. Consequently, the cooperative is able to acquire risk capital from non-member sources. However, members may have to share profits and eventually control rights with outside investors who are not necessarily patrons of the cooperative and thus may have diverging interests. Conflicting goals between maximizing returns to investors and maximizing returns to member-patrons may occur as a result. The more radical model in this branch – conversion to a corporation (IOF) – is an exit strategy adopted by cooperatives that choose not to continue operating as a user owned and controlled organization (Schrader, 1989).

Alternatively, cooperatives may acquire risk capital from outside investors without converting by means of two models: cooperatives with capital seeking entities and investor-share cooperatives. In the first model, investors acquire ownership rights in a separate legal entity wholly or partly owned by the cooperative. In other words, outside investor capital is not directly introduced in the cooperative firm, but in trust companies, strategic alliances, or subsidiaries. In investor-share cooperatives, investors receive ownership rights in the cooperative in addition to the traditional cooperative ownership

rights held by member-patrons. That is, the cooperative issues more than one class of shares assigned to different “owner” groups.

## 6. SUMMARY AND CONCLUSIONS

The traditional cooperative structure faces increasing survival challenges in light of the process of agricultural industrialization. It is commonly argued that the property rights structure of traditional cooperatives is vaguely defined and thus leads to organizational inefficiencies that undermine their ability to compete with alternative organizational forms in an increasingly concentrated, tightly coordinated, and capital intensive food system. In particular, many scholars have suggested that investment constraints resulting from the nature of cooperative residual claims and imperfect access to external sources of finance is the “Achilles’ heel” of traditional agricultural cooperatives. This is so because the ability to access financial resources is tantamount for firms trying to capture or generate rents in industrialized agricultural and food supply chains.

This study examined the nature of financial constraints in U.S. agricultural cooperatives. The following arguments were identified in the literature to support the claim that agricultural cooperatives are financially constrained: (1) cooperative residual claims are restricted; (2) cooperative members do not have appropriate incentives to invest; (3) equity capital acquisition in traditional cooperatives is tied to member patronage (with consequent dependence on internally generated capital); (4) cooperative equity capital is generally not permanent; and (5) cooperatives have limited access to external sources of funds. As a consequence of restricted residual claims and imperfect access to external funds, cooperatives are constrained in their ability to acquire risk capital for investment

and growth purposes and might incur higher weighted average cost of capital relative to IOFs.

Despite many convincing theoretical arguments supporting the cooperative capital constraint hypothesis, the available empirical evidence is found to be inconclusive. This evidence notwithstanding, cooperatives are adopting new organizational structures in order to ameliorate perceived financial constraints. These innovative organizational models are characterized as “departures” from the traditional cooperative structure, as some of the restrictions on cooperative ownership rights are relaxed. Instead of converting to corporate forms, agricultural cooperatives seek to ameliorate their property rights structure while maintaining user ownership and control. The survival and growth of agricultural cooperatives in responding to the challenges brought about by agroindustrialization will likely depend on the success of such organizational innovations.

Why are agricultural cooperatives pursuing new organizational models by relaxing some of the restrictions of the traditional cooperative ownership rights structure? Investment constraints arise in agricultural cooperatives as a result of free rider, horizon, and portfolio problems, which in turn emerge because ownership rights are restricted to members, non-transferable, redeemable, and with benefit distribution proportional to usage rather than member investment. As a result, cooperative members lack necessary incentives to invest in traditional cooperatives because their investment is illiquid and does not receive adequate returns. Risk bearing costs are simply too high. We argue that by relaxing some of these restrictions on ownership rights non-traditional cooperatives may provide incentives for member and non-member investment in organization-specific assets thereby ameliorating perceived investment constraints.

Our analysis of new cooperative models suggests that in general the solution of perceived financial constraints in cooperatives entails some degree of organizational redesign rather than the extreme solution of conversion or demutualization. That is, ownership rights related to residual return and control rights of agents tied contractually to the firm are redefined and reassigned. For example, the cooperative may choose to relax the restriction that ownership rights be restricted to member-patrons or introduce transferable equity shares to build a permanent equity capital structure. However, when restrictions on traditional cooperative ownership rights are attenuated, new organization costs may surface such as agency costs, collective decision making costs, and influence costs. In other words, there are trade-offs involved in organizational redesign that cooperative leaders should be aware of.

The rapid and fundamental structural changes occurring in the global food system – commonly referred to as agricultural industrialization – exposes agricultural cooperatives to heightened domestic and international competition from other business forms. These changes also suggest that it is important to consider whether the organizational structures that have evolved in the past are likely to remain appropriate for the future. The success of agricultural cooperatives in responding to the challenges brought about by agricultural industrialization will likely depend on both competitive strategy and organizational structure.

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