

# The Future of U.S. Agricultural Cooperatives: A Neo-Institutional Approach

Michael L. Cook

Thirty years ago Helmberger speculated that industrialization of agriculture would lead to the demise of farmer cooperatives (Helmberger 1966, p. 1434). In responding to Helmberger's prediction, Abrahamsen countered by suggesting that as industrialization of agriculture evolved, cooperatives would increasingly become the "farmer's integrating agency" (Abrahamsen, p. 1442).

In this paper I examine these two divergent opinions by (a) briefly describing the structural and strategic evolution of U.S. farmer cooperatives since the Helmberger and Abrahamsen (H&A) forecasts, (b) utilizing recent developments in neo-institutional economic (*organizational economic*) theory to generate hypotheses regarding structural and strategic shifts in U.S. agricultural cooperatives, and (c) further applying neo-institutional economics to speculate what the future might hold for U.S. producer-owned and -controlled agricultural cooperatives.

## Evolution of U.S. Agricultural Cooperatives

Most U.S. agricultural cooperatives originated in the early 1900s because of a combination of economic, farm organization, and public policy factors. During the ensuing forty years, U.S. farmer cooperatives slowly but consistently increased their aggregate market shares of inputs handled, farm marketings, and services provided. By the time H&A made their predictions, cooperative market shares had grown to 24% of farm marketings and 15% of purchased inputs (table 1).<sup>1</sup>

---

Michael L. Cook is Robert D. Partridge Professor in the Social Sciences Unit, College of Agriculture, Food, and Natural Resources, at the University of Missouri.

<sup>1</sup>Marketing share estimates represent cooperative activity at the farmgate or first-handler level. Farm supply share estimates represent cooperative activity in selling farm supplies to farmers for use in production. For a detailed explanation of how these aggregated market shares are estimated, see *USDA Farmer Cooperatives*, Vol. 61, No. 11, February 1995, pp. 4-5.

In the twenty years following the H&A forecasts, cooperative market shares for farm marketings and purchased inputs continued to increase until they reached 30% and 28%, respectively, in 1982. The subsequent farm depression saw a reversal of market share growth; a decline to 25% in both farm marketings and input supplies by 1987-88. Since this recent nadir, cooperative market shares have again increased each year until they reached 1982 levels of 30% and 28% in 1993.

Aggregate market share numbers indicate general increases and decreases in producer collective action, but specific commodity market shares provide more information in analyzing structural change. Cooperative market shares in farm marketings vary by commodity—from 10% in livestock to 85% in milk (table 2). Over the forty-year period, cooperative farm marketings of livestock declined slightly, fruits and vegetable marketings remained steady, grains and oilseed marketings increased slightly, and milk and cotton marketings increased significantly.

Figures in table 3 represent cooperative market shares of production inputs from 1951 through 1993. Cooperative market shares in seed sales decreased, feed market shares remained steady, and agricultural chemical, petroleum, and fertilizer market shares increased dramatically.

Market share trends at the farmgate and first-handler levels suggest that, except in the capital intensive livestock processing subsector and the research and development intensive seed subsector, cooperatives have increasingly become what Abrahamsen calls farmers' integrating agency.

What about the degree of forward or backward integration into the food or input chain? Helmberger states that "cooperatives have made little headway in invading the industrial

**Table 1. U.S. Farmer Cooperatives' Shares of Farm Marketings and Farm Production Expenditures, 1950-93, in Percentages**

	1951	1961	1971	1982	1988	1993
Percentage of cash receipts of marketings	19	24	26	30	25	30
Percentage of farm production expenditures	13	14	16	28	25	28

Source: USDA-ACS, *Farmer Cooperatives; Cooperative Historical Statistics*, Cir. 1; and USDA-ACS Research Report 37.

**Table 2. U.S. Farmer Cooperatives' Shares of Farm Marketings, 1951-93, Selected Commodities, in Percentages**

Commodity/Year	1951	1961	1971	1982	1988	1993
Milk	46	58	70	77	76	85
Cotton products	10	19	25	36	41	35
Grains/oil seeds	35	33	34	36	30	42
Fruit/vegetables	20	22	25	20	24	21
Livestock	13	13	11	11	7	10

Source: USDA-ACS, *Farmer Cooperatives; Cooperative Historical Statistics*, Cir. 1; and USDA-ACS Research Report 37.

**Table 3. U.S. Farmer Cooperatives Shares of Farm Input Sales, 1951-93, Selected Input Products, in Percentages**

Product/Year	1951	1961	1971	1982	1988	1993
Fertilizer	16	26	30	42	40	42
Petroleum	19	25	35	36	39	48
Ag chemicals	12	16	20	30	28	31
Feed	18	18	17	18	18	21
Seed	17	16	15	17	17	11

Source: USDA-ACS, *Farmer Cooperatives; Cooperative Historical Statistics*, Cir. 1; and USDA-ACS Research Report 37.

sectors which serve agriculture" (1966, p. 1429). Twenty-five years later Rogers and Marion verify Helmberger's concern. Their study found that the 100 largest agricultural marketing cooperatives accounted for 6.9% of the total value of shipments, up from 5.7% five years earlier. Based on value added, these same cooperatives held only a 3.6% share, up from 3.1%. These figures suggest that cooperatives tend to operate in the low value-added, first-stage food manufacturing industries. No studies were found that analyzed the degree of backward integration by supply cooperatives, although, according to industry sources, fertilizer cooperatives control 25% to 40% of the manufacturing capacity.

### Why Aren't Cooperatives the Dominant Form of Agribusiness in the United States?

Even though cooperatives made considerable advances in market shares at the farmgate and first-handler levels and minor progress in food manufacturing during the past thirty-five years, they have not become the dominant form of business organization in the agri-food chain.

A better conceptual understanding of the genesis, growth, decline, and demise of the cooperative business organization would serve us well in examining this question and in the exercise of speculating about the role of the cooperative form of business in the future of the U.S. agri-food chain. This understanding

should be dynamic in nature. Unfortunately, no formal "life cycle" theory exists. LeVay, in his seminal article, stresses the need to formulate a workable paradigm. He also brings to our attention several embryonic notions that might complement a theory of the evolution of cooperatives. These include

1. "Wave" Theory—First enunciated by Helmberger: "we should not be surprised to see waves of cooperative organization, especially in depressed times, followed by waves of cooperative failures" (Helmberger 1966, p. 1430).
2. "Wind-It-Up" Theory—Suggested by LeVay, building on Nourses's 1942 comments: "Once they have secured the terms they require, competitors may adjust their prices or improve their services such that the group (i.e., the cooperative) becomes redundant. The cooperative has achieved its purpose and members, considering that it is now obsolete, may wind it up" (LeVay, p. 28).
3. "Pacemaker" Theory—Articulated by LeVay in his analysis of Helmberger's 1964 piece on cooperative structure: "the very existence of a successful cooperative makes for greater efficiency amongst the competitors, so that even when price and service adjustments have been effected, the organization is kept in being to fulfill a pacemaker role" (LeVay, p. 28).

In addition, Staatz suggests a fourth complement to a potential dynamic paradigm of cooperative evolution:

4. "Mop-Up" Theory—Staatz suggests that "in static or declining markets, I.O.F.s may have little to lose by acting opportunistically. Such behavior may therefore create incentives for farmers to integrate forward via cooperatives in these markets" (Staatz 1987a, p. 89).

Given these four notions as a starting point, I propose the following five-stage crude model of cooperative genesis, growth, and demise. This introduces the transaction and agency cost groundwork for the subsequent section on speculating about the future of agricultural cooperatives.

### Stage One

The two economic justifications for forming cooperatives are (a) individual producers need institutional mechanisms to bring economic balance under their control, usually because of

excess supply-induced prices; and (b) individual producers need institutional mechanisms to countervail opportunism and holdup situations encountered when markets fail. Depressed prices or market failures create incentives for producers to react collectively. Generally, the first stage in the formation of a cooperative is viewed as defensive in nature. In analyzing the six traditional types of U.S. agricultural cooperatives, it becomes obvious that their collective entrepreneurial energy originated in survival-defensive roots. These six include the following.

1. Farm Credit System. Twelve federal land banks were the first components of the Farm Credit System when it was chartered by Congress under the Federal Farm Loan Act of 1916. Subsequently, the Federal Intermediate Credit Banks were created in 1923 to provide short- and intermediate-term credit: the Production Credit Association in 1933, the Banks for Cooperatives in 1933, and the regulator—the Farm Credit Administration. The motivating forces behind the efforts to organize the systems came from concerns about the unavailability of agricultural and real estate loans, extremely high rates, and the length of terms (federal law prohibited national banks from making loans with maturities beyond five years).
2. Rural Utilities. The rural electric and telephone cooperatives were formed in 1936 and 1949, respectively, to provide a service that was missing because of the high per unit cost of serving a low-density customer base.
3. Nourse I: Local Cooperatives. These multi-purpose local cooperatives are economic units operating in a geographical space where achieving scale and scope economies in commodity assembly (usually grains or oilseeds) and input retailing might dictate the presence of a spatial monopolist/monopsonist. Founded to provide a missing service, to avoid monopoly power, to reduce risk, or to achieve economies of scale, they epitomize the Nourse philosophy of cooperation—that of a "competitive yardstick" with the objective of keeping investor-oriented firms competitive.
4. Nourse II: Multifunctional Regional Cooperatives. Competitive yardstick-driven regional cooperatives usually perform a combination of input procurement, service provision, and/or marketing. Many integrate forward or backward beyond the first-handler or wholesaling levels. They might be organizationally structured as federated,

centralized, or a combination of both. They differ from Nourse I local cooperatives in that there is little probability of their being spatial monopolists/monopsonists in their geographic markets.

5. Sapiro I Cooperatives: Bargaining Cooperatives. Bargaining cooperatives address market failures through horizontal integration. Producers organize these Sapiro-inspired associations in an attempt to affect the terms of trade in favor of members when negotiating with first handlers. The functions of bargaining cooperatives can be described as twofold: (a) to enhance margins, and (b) to guarantee a market. These types of associations are found most often serving perishable commodity producers, where temporal asset specificity creates a situation of potential postcontractual opportunism.
6. Sapiro II Cooperatives: Marketing Cooperatives. Marketing cooperatives are a form of producer vertical integration that circumvent and compete with proprietary handlers. They usually can be categorized in one of two ways, single or multiple commodity. The objectives are similar—to bypass the investor-owned firm, enhance prices, and in general pursue the Sapiro goals of increasing margin and avoiding market power. (For more details on this taxonomy, see Cook 1993.)

### Stage Two

Cooperatives founded for the economic balance-excess supply-induced prices reasons are usually short-lived and have little economic impact on their members' livelihoods.<sup>2</sup> These are the types of cooperatives that Helmberger most likely refers to in his wave theory. On the other hand, cooperatives formed to confront market failures usually could market or deliver inputs at more favorable prices than I.O.F. oligopolists/oligopsonists. Therefore, since benefit usually outweighs cost, they survive past the infant stage.

### Stage Three

Cooperatives surviving stage two become successful in correcting, or at least ameliorating,

<sup>2</sup> Cotterill masterfully addresses the genesis and performance of these species of U.S. agricultural cooperative.

the negative economic impacts of market failures. Consequently, the strategic behaviors of competitors begin to modify. At this stage, prices now differ little among I.O.F. competitors and the cooperative. Progressively, the short-run costs of transacting with a cooperative become more scrutinized by members. These transaction costs, seldom recognized in the fervor of "combating a monopolist/monopsonist," now become important. These costs are generated by a vaguely defined "user versus investor" set of property rights. These vaguely defined property rights lead to conflicts over residual claims and decision control—especially as cooperatives become increasingly complex in their organizational structure. For this paper, conflicts over residual claims and decision control caused by the unique user-driven characteristics of cooperatives are categorized into five general problem sets.

1. Free Rider Problem. When property rights are untradeable, insecure, or unassigned, the free rider problem emerges. This is a situation in which current members or nonmembers use a resource for their individual benefit and property rights are not sufficiently well suited and enforced to ensure that current member-patrons or current nonmember-patrons bear the full costs of the actions and/or receive the full benefits they create. This situation occurs particularly in open membership cooperatives. An example would be when a pear producer refuses to join the membership of a pear bargaining association but captures the benefits of the negotiated terms of trade. A more complex type of free rider problem occurs when dealing with the common property problem (or insider free rider problem). This occurs when new members obtain the same patronage and residual rights as existing members and are entitled to the same payment per unit of patronage. This set of equally distributed rights combined with the lack of a market to establish a price for residual claims that reflects accrued and present equivalents of future earnings potential creates an intergenerational conflict. Because of the dilution of the rate of return to existing members, a disincentive is created for them to invest in their cooperative.
2. Horizon Problem. The horizon problem occurs when a member's residual claim on the net income generated by an asset is shorter than the productive life of that asset

**Table 4. Degree of Residual Claimant and Decision Control Problems in U.S. Agricultural Cooperatives**

Property Right Constraint/ Cooperative Type	Nourse I	Nourse II	Sapiro I	Sapiro II	Sapiro III
Free rider problem	major	minor	major	minor	minimal
Horizon problem	major	major	none	minor	minimal
Portfolio problem	minor	major	none	major	minimal
Control problem	minor	major	minor	major	minor
Influence costs problem	major	major	minimal	minor	minor

Note: Range is none to minimal to minor to major.

(Porter and Scully). This problem is caused by restrictions on transferability of residual claimant rights and the lack of liquidity through a secondary market for the transfer of such rights. The horizon problem creates an investment environment in which there is a disincentive for members to contribute to growth opportunities. The severity of this problem intensifies when considering investment in research and development, advertisement, and other intangible assets. Consequently, there is pressure on the board of directors and management to (a) increase the proportion of the cooperative's cash flow devoted to current payments to members relative to investment, and (b) accelerate equity redemptions at the expense of retained earnings.

3. **Portfolio Problem.** The portfolio issue can be viewed from the cooperative firm's point of view as another equity acquisition problem. The lack of transferability, liquidity, and appreciation mechanisms for exchange of residual claims prevents members from adjusting their cooperative asset portfolios to match their personal risk preferences. The cause of this problem is again the tied-equity issue—the investment decision is “tied” to the patronage decision. Therefore, members hold suboptimal portfolios, and those who are forced to accept more risk than they prefer will pressure cooperative decision makers to rearrange the cooperative's investment portfolio, even if the reduced risk portfolio means lower expected returns.
4. **Control Problem.** The agency costs associated with trying to prevent the divergence of interests between the membership and their representative board of directors (principal) and management (agent) in a cooperative introduce the control problem. Because of incomplete search and monitor-

ing information devices, governance bodies operate with a handicap. The information provided and external pressure exerted by publicly traded equity instruments is not present in agricultural cooperatives. This problem becomes further exaggerated as the size and complexity of a cooperative increases (Staatz 1987b, p. 51).

5. **Influence Costs Problem.** If a cooperative's charter permits it to engage in a wide range of activities, then diverse objectives among its members can lead to damaging influence activities. Influence activities arise in organizations when organizational decisions affect the distribution of wealth or other benefits among members or constituent groups of the organization and when in pursuit of their selfish interests, the affected individuals or groups attempt to influence the decision to their benefit. The magnitude of influence costs depends on (a) the existence of a central authority, (b) the kinds of procedures that govern decision making, and (c) the degree of homogeneity or conflict in the interests of cooperative members (Milgrom and Roberts).

The first four columns in table 4 are my subjective ranking of how constraining these property rights factors are on the strategies and structures of Nourse I and II and Sapiro I and II cooperatives.

#### Stage Four

As cooperative decision makers become aware of these unique property rights issues, there is a growing awareness of the positive quasi-rents that might be forfeited if the cooperative were to decide to exit. Sunk costs, competitive yardstick arguments, pacemaker reasons—all become major components of strategic decision

making during this period. Managing cooperatives during this stage is exceedingly challenging (Cook 1994). But near the end of this period of increasingly complex analysis of tradeoffs between vaguely defined property rights hurdles and unique opportunities, cooperatives conclude that their options are narrowed to three: (1) exit, (2) continue, or (3) transition.

### Stage Five

In stage five the cooperative leadership chooses between the three aforementioned strategic choices of exit, continue, or transition.

1. **Exit.** Within the exit option, two generic alternatives exist: (a) to liquidate or (b) to restructure as an investor-oriented firm. Schrader suggests that low performance cooperatives opt to liquidate or merge with other cooperatives, whereas high-performance cooperatives opt to restructure as investor-oriented firms.
2. **Continue.** A number of the property rights constraints described in stage three result in members having tendencies to undercapitalize their cooperatives. During this stage, cooperatives appear to follow one of two generic alternatives: (a) to seek outside equity capital without restructuring as an I.O.F. or (b) to pursue a proportionality strategy of internally generated capital. The external approach results in publicly held subsidiaries, joint ventures with other cooperatives, joint ventures with noncooperatives, and limited liability companies with sundry partners. In other words, strategic alliances are utilized as equity capital-seeking strategies. The proportionality strategy structures the cooperative to be disciplined in the pursuance of the principle that "the financial responsibility will be shared on a proportional basis." This results in policies and strategies such as base capital plans, proportional voting, narrowing product scopes, pooling on a business unit basis, and capital acquisition on a business unit basis. Royer (pp. 92-95) goes on to introduce a new model under the proportionality option named the patron-owned firm (POF), which is currently being considered by a number of U.S. cooperatives.
3. **Shifting.** A third option considered is that of shifting to a New Generation cooperative Sapiro III structure. A Sapiro III organization is a value-added marketing coop-

erative that tempers the disincentives of the five property rights constraints described in stage three. This structure attempts to ameliorate the aforementioned disincentives by developing asset appreciation mechanisms, increasing share liquidity by creating delivery right clearing houses, base equity capital plans, and membership policies that eliminate the external free rider. Several Sapiro II marketing and processing cooperatives have already made this shift.

### Outlook for U.S. Cooperatives

Currently two phenomena are occurring in agricultural cooperative organizations in the United States. Traditional cooperatives are adjusting to the property-right constraints by exiting, restructuring, and shifting. These adjustments appear to have had positive impacts on cooperative market share growth since 1988. The second post-1990 phenomenon that is taking place is a dramatic birth of Sapiro III New Generation cooperatives described in stage five. According to Egerstrom, more than \$1.2 billion has been invested in this type of cooperative in the past three years. Both of these phenomena suggest that cooperative strategies are becoming more offensive in nature. Although noneconomic causes for forming cooperatives should not be taken lightly, in this paper the argument is limited to what economics says about the potential of the cooperative organization in the future. The property rights discussion, transaction cost, and incomplete contracting approaches might suggest that collective action in U.S. agriculture will exist if

1. there is a new market in which existing preferences are unknown. The cooperative may be the most efficient way of combining the market and political preference articulation to produce desired products;
2. a situation has transaction specific investments on both sides of the exchange but with widely different economies of scale;
3. shared risk through relational contracts can be accomplished;
4. high-frequency transactions requiring long-term commitment in an uncertain environment exist;
5. they continue to prevent transformation of large number exchange in bilateral exchange in high-frequency exchange situations;

6. difficult-to-exchange multidimensional goods that possess the properties of both private and public goods is efficient;
7. declining markets exist. In declining markets, long-term consequences to farmers' trading partners of acting opportunistically are less severe than in expanding markets (Staatz 1987a);
8. producers recognize asset-specificity-driven opportunism in the early stages of technology adaptation;
9. farmers continue vertically integrating via cooperative firms to internalize externalities imposed on them by their trading partners, particularly where reputation and quality assurance are concerned;
10. cooperatives assist in the redistribution of property rights (political action) in farmers' favor;
11. producers recognize that for intermediate levels of asset specificity in markets characterized by shortages, marketing cooperatives are an efficient, even superior, governance structure (Hendrikse and Veerman); and
12. if property rights constraints are ameliorated producers are more likely to invest in cooperatives.

In summary, the future for market failure-correcting cooperatives that shift or restructure toward more offensive strategies and structures looks promising but challenging. Additionally, producers who organize new cooperatives that avoid the constraints of vaguely defined property rights have bright futures if current state and federal public policy does not change.

#### References

- Abrahamsen, M.A. "Discussion: Government Regulations and Market Performance—Problems in Research, and Future Roles for Agricultural Cooperatives." *Amer. J. Agr. Econ.* 48(December 1966):1439–43.
- Cook, M.L. "Cooperatives and Group Action." *Food and Agricultural Marketing Issues for the 21st Century*. D. Padberg, ed., pp. 154–69. College Station TX: Texas A&M University, 1993.
- . "The Role of Management Behavior in Agricultural Cooperatives." *J. Agr. Coop.* 9(July 1994):42–58.
- Cotterill, R.W. "The Competitive Yardstick School of Cooperative Thought." *Amer. Coop.*, American Institute of Cooperation, Washington DC, 1984.
- Egerstrom, L. *Make No Small Plans: A Cooperative Revival for Rural America*. Rochester MN: Lone Oak Press, 1994.
- Helmsberger, P.G. "Cooperative Enterprise as a Structural Dimension of Farm Markets." *J. Farm Econ.* 46(November 1964):603–17.
- . "Future Roles for Agricultural Cooperatives." *Amer. J. Agr. Econ.* 48(December 1966):1427–35.
- Hendrikse, G.W., and C.P. Veerman. "Marketing Cooperatives and Financial Structure." Tilburg University, Center Discussion Paper 9546, 1995.
- LeVay, C. "Agricultural Co-operative Theory: A Review." *J. Agr. Econ.* 34(January 1983):1–44.
- Milgrom, P., and J. Roberts. "Bargaining Costs, Influence Costs, and the Organization of Economic Activity." *Perspectives on Positive Political Economy*. J. Alt and K. Shepsle, eds. Cambridge UK: Cambridge University Press, 1990.
- Nourse, E.G. "The Place of the Cooperative in Our National Economy." *American Cooperation 1942 to 1945*. American Institute of Cooperation, pp. 33–39, Washington DC, 1995.
- Porter, P., and G. Scully. "Economic Efficiency in Cooperatives." *J. Law and Econ.* 30(October 1987):489–512.
- Rogers, R.T., and B.W. Marion. "Food Manufacturing Activities of the Largest Agricultural Cooperatives: Market Power and Strategic Behavior Implications." *J. Agr. Coop.* 5(July 1990): 59–73.
- Royer, J. "Cooperative Principles and Equity Financing: A Critical Discussion." *J. Agr. Coop.* 7(July 1992):79–98.
- Sapiro, A. "True Farmer Cooperation." *World's Work*, May 1923, pp. 84–96.
- Schrader, L. "Equity Capital and Restructuring of Cooperatives as Investor-Oriented Firms." *J. Agr. Coop.* 4(July 1989):41–53.
- Staatz, J.M. "Farmers Incentives to Take Collective Action via Cooperatives: A Transaction Cost Approach." *Cooperative Theory: New Approaches*. J. Royer, ed., pp. 87–107. Washington DC: U.S. Department of Agriculture, ACS Service Report No. 18, 1987a.
- . "The Structural Characteristics of Farmer Cooperatives and Their Behavioral Consequences." *Cooperative Theory: New Approaches*. J. Royer, ed., pp. 33–60. Washington DC: U.S. Department of Agriculture, ACS Service Report No. 18, 1987b.
- U.S. Department of Agriculture, Agricultural Cooperative Service (USDA-ACS). *Cooperative Historical Statistics*. Circulars, various years.
- . *Farmer Cooperatives*. Circulars, various years.