

From Agrarian to Global Values: How 20th Century U.S. Agricultural Cooperatives Came to Terms with Agricultural Industrialization

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Abstract

Little is known about cooperative adjustment to industrialized agriculture. This inductive study hypothesizes that cooperative adjustment to industrialization is a function of critical resource changes, managerial vision, and ideological change. Agrarian-oriented cooperatives sought to maintain farmer control over agriculture. They feared production from industrialized agriculture would displace family farm production, weakening cooperatives. “Top-down” corporate vertical integration presaged a new era of feudal control over agriculture. Open market decline would lock formerly independent, entrepreneurial producers into the feudal dependence of “serfdom” as contract growers—the equivalent of hired labor.

The “serfdom” metaphor motivated cooperatives to buffer producers from structural change by establishing more markets. As integrated, industrialized production grew commodity by commodity, cooperatives increasingly regarded producers as a scarce and critical resource. Yet, agrarian-oriented cooperatives did not foresee that the moral hazard associated with pork contracting would limit grower exploitation. Nor did such cooperatives recognize how productivity-enhancing technologies accelerated farmer attrition. Visionary cooperative managers compensated for agrarianism’s ideological weaknesses by creating new, global cooperative goals such as “feeding the world.” By the end of the 20th century, cooperatives had come to regard capital as their scarce and critical resource.

Keywords: agricultural cooperatives, agrarianism, agricultural industrialization, resource dependency

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Introduction

Even as the early twentieth century farm economy was modernizing by substituting tractors and combines for draft animals, agricultural firms were developing a radically new production system that would replace independent family farmers with contract growers and market coordination with vertical integration. Agricultural industrialization eliminated the need for the market-clearing role of open markets by combining food production, processing, and distribution into an internally coordinated continuous flow process. Driven by the norm, "the low cost producer survives," industrialized agriculture's impact has been massive and ongoing, affecting organizational relationships among producers and marketers of commodities such as processing vegetables, beef, poultry, pork, dairy, and grain (Reimund et al., 1981). Representing a textbook model of perfect competition, traditional family farmers were too small, too diversified and too scattered to challenge factory farming on their own (Hallberg, 1980). Farmer-owned cooperatives came to their support.

Cooperatives are user-owned, user-controlled and user-benefiting. They protect farmers' position in agriculture by giving them greater control over their destiny, often by enhancing their bargaining power. Marketing what members produce and supplying farm inputs often requires cooperatives to address the market's failure to provide sufficient competition, access or rules of exchange such as commodity grading. Yet, industrialization was far more than the problematic markets routinely addressed by collective marketing: its relentless progression from commodity to commodity suggested that once all farming was done by corporations, family farmers would disappear (Kirkendall, 1991). This threat led cooperatives to identify farmers as a scarce and critical resource: if farmers disappeared, so would the farmer-owned cooperatives who marketed their grain, livestock, fruit and milk.

Farmers considered themselves low cost producers because food costs were not excessive: in the 1960s, food costs represented only about 16 percent of income in an affluent nation (Paarlberg, 1973). The nature of farmer competition also contributed to low food prices. Farmers who tried to out-produce their neighbors by being an early adopter of productivity-enhancing technologies lost their advantage when the technology became commonplace. To maintain their competitive edge, they adopted yet another productivity-enhancing technology; this "technology treadmill" ultimately resulted in aggregate production levels that pressured product prices and made farmers themselves redundant (Cochrane, 1993).

Agrarians attributed farmer decline to institutional forces—the decline of open, competitive markets—not technological substitution. Marketing cooperatives

filled the gap, inspired by the concept of cooperatives as “competitive yardsticks” first proposed by economist Edwin Nourse in 1922 (Nourse, 1922). An even greater problem than inadequate competition was the loss of farmer prerogatives (or control) over agriculture as production from corporate-owned large scale factory farms displaced family farm production. Foreseeing that transition as early as 1922, Nourse suggested that a new era of feudal control over agriculture was emerging. Subsequently, the metaphor of “serfdom” was used by agrarians throughout the 20th century to summarize industrialization’s constraints on farmer *choice*—the right to decide what was produced, where and how it was produced, and how it was marketed.² The ability to choose gave farmers their status as risk-taking entrepreneurs. Without choice, said cooperative educator Owen Hallberg in 1980, “a man is but a number, an instrument, a thing” (Hallberg, 1980:21).

Cook (1993) notes that little is known about cooperatives’ adjustment to industrialization. To address that lack, this study presents an ad hoc framework of cooperative adjustment based on inductive reasoning. The framework consists of three hypotheses influenced by resource dependency theory.

The study argues that to participate in industrialization, cooperatives had to reconcile the values and goals of an agrarian heritage which made farmers paramount with industrialization’s emphasis on consumers and capital. Cooperatives’ adjustment to industrialization is hypothesized to be a function of critical resource changes, managerial vision, and ideological change. This framework is presented first. Then follows a brief chronological summary of 20th century cooperative reaction to industrialization and notable “turning points” such as the industrialization of the pork industry. This overview, based on secondary sources and author interviews, provides a context for understanding how the hypotheses contribute to an understanding of cooperative adjustment. The section ends with a commentary on the validity of the “serfdom” metaphor based on recent ethnographic evidence followed by conclusions.

2 “Serfdom” continues to be a powerful economic metaphor. In 2007, law professor Peter Carstensen (2007) testified before the Senate committee on agriculture that, “The American farmer faces increasingly dysfunctional markets for both the inputs and outputs of the farm. The resulting squeeze threatens the traditional structure of American agriculture and is likely to result in the gradual reduction of many of those producing food and fiber in this country to a kind of economic serfdom.”

Theory and hypotheses

This section presents a framework based on three hypotheses to explain 20th century cooperative adjustment to industrialization. The hypotheses are drawn from resource dependency theory.

Hypothesis 1: *Cooperative adjustment to industrialization was marked by a change in resource emphasis.*

For most of the 20th century, cooperatives arguably regarded family farmers as a critical and scarce resource to be buffered and protected from the market impacts of industrialization. This was particularly evident during the late 20th century industrialization of the pork industry. By the end of the century, cooperative efforts to insulate family farmers from industrialization had given way to a goal of acquiring and using capital efficiently.³

Cooperatives' shift in resource emphasis can be understood through resource dependency theory (RDT). RDT goes beyond profit maximization to recognize survival as the primary goal of the firm; survival depends on the firm's ability to source essential resources (Anderson, 1982). RDT focuses on the interrelationship between the organization and the external environment, the source of resources. Resource acquisition can be problematic—challenged by competitors, customers, and government regulations, etc.—making the organization's response to uncertainty a key indicator of its effectiveness. Over time, as argued here, organizations can adapt to resource constraints by changing the resource considered scarce and critical (Pfeffer and Salancik, 1978).

Neoclassical economics explains changes in resource emphasis by a shift in relative factor prices. However, RDT is used as the organizing framework for this study because it considers how resource availability causes organizations to gain and lose power. If cooperatives did not adjust to industrialization, they risked becoming an anomaly.

RDT also recognizes that organizational power is “determined by the definition of social reality created by participants as well as their control over resources” (Pfeffer and Salancik, 1978:259). This provides scope for addressing how ideological change marked cooperative modernization and adjustment.

3 Cooperative reaction to the external condition of industrialization arguably provided a rationale for the internal changes in cooperative property rights and governance that have motivated many contemporary studies, notably Cook (2004).

Hypothesis 2: *Visionary cooperative managers broke with the past by creating new cooperative identities.*

This hypothesis reflects the RDT view of managers as a resource to resolve strategic deadlocks and uncertainty. Because industrialization was corporate-led, cooperatives confronted three sources of uncertainty. It was not clear how industrialization would be organized: "Who is going to make the decision of what is produced? How is it produced? When and how are products marketed? Who is going to own the land and livestock?" (Knutson, 1973:26). Cooperatives also did not know where industrialization would appear next. In 1992, Coffey (1992:114) asked, "What's next? Dairy? Beef? Soybeans?"

Most important, it was not clear whether producers should fight to abolish industrialized agriculture or try to capture part of the benefits (Hayenga, 2000). Cooperatives' agrarian frame of reference limited their ability to recognize how they could turn industrialization to their advantage. Yet, there were penalties to inaction. Organizations who do not establish congruence between their activities and values and the norms of acceptable behavior in the larger social system risk threatening organizational legitimacy, if not survival (Dowling and Pfeffer, 1975).

Hypothesis 3: *Ideological change fostered cooperative adjustment to industrialization.*

Cooperatives are often described as ideological, an expression which suggests a strong commitment to particular values and goals and a rejection of others. Indeed, Nilsson and Hendrikse (2011) see cooperatives as inherently conflictual insofar as member interests as a cooperative group or society are at odds with the cooperative's business objectives. The goal of keeping a particular class or group in production, as argued here, can be regarded as an example of the potentially divisive socio-economic objectives these authors have in mind.

The mid-20th century evolution of Norway's consumer cooperatives also involved a reformulated ideological mission (Lange et al., 2006:12):

From focusing on its role as a moral alternative to capitalism, the cooperative movement shifted to concentrating on its role as an efficient provider of consumer goods. This broad change was largely accepted by members and important allies, which raises the question of how the co-operatives squared their commercial orientation with their traditional organizational and ideological distinctiveness?

U.S. cooperatives faced a similar challenge: "To a very considerable extent, industrialization is about converting agriculture from a mentality of 'here's what we produce' to 'here's what the consumer wants'" (Drabenstott, 1995:21).

Another parallel to U.S. experience is suggested by recent work by Murtagh and Ward (2011) on the evolution of Irish dairy cooperatives. These authors suggest that ideological weakness at the grassroots level may have encouraged Irish cooperatives to adapt cooperative ideology to fit the global food system. It is possible that agrarian insistence on industrialization's potential for serfdom may have created a similar void—and response—among U.S. cooperatives. That is, Midwestern U.S. pork contracting may not have been as one-sided as the serfdom metaphor implies. In that case, the new cooperative goals and identities created by visionary cooperative managers (hypothesis 2) arguably provided the foundation for a more robust adjustment to industrialization.

To summarize, cooperative adjustments to industrialization are hypothesized to be a function of critical resource changes, managerial vision, and ideological change.

Farmer preferences for choice and independence

Agrarian ideology—“farm fundamentalism”—reinforced farmer class and status by highlighting the economy's dependence on farming for basic food and fiber requirements. In contrast, in 1919, cooperative economist Edwin Nourse compared agriculture's relationship to industrialism with colonial servitude to England (Nourse, 1919). Although anti-trust legislation curbed the power of the turn of the century “trusts” dominating meat packing, rail transportation, oil, and other commodities, at the local level numerous opportunities still existed to exploit producers. In effect, producers were over-controlled by markets which gave corporate monopolies the power to demand excessive interest rates when farmers needed money for planting, exorbitant rail rates for shipping grain, and high prices for farm equipment (Bell, 1976).

To reinforce their entrepreneurial freedom, producers sought a light touch from their own organizations. In 1935, H. E. Babcock famously declared, “I regard a farmer-owned, farmer-controlled cooperative as a legal, practical means by which a group of self-selected, selfish capitalists seek to improve their individual economic positions in a competitive society” (Babcock, 1935:42). The expression, “if the farm was profitable, the cooperative did not have to be” was one of the ramifications of this attitude (Stokes, Jr., 1957:12). Cooperatives reified agrarian values by fostering producer-centered organizational cultures reflecting what Barron calls a “producer ethic” (Barron, 1997:82; Hogeland, 2004, 2006). Such cultures arguably fostered producer expectations that slowed cooperatives' adjustment to industrialization.

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Certainly, Nourse's competitive yardstick norm was a strong restatement of the need for cooperatives to protect agrarian values as agriculture industrialized. Formalized in 1945, the norm established that cooperatives had a responsibility to foster market conditions conducive to producer survival, e.g., open, competitive markets (Nourse, 1945). Producer survival, popularly understood as farmer control over agriculture, meant control over decisions (Carter and Johnston, 1978). The core of the norm was the "extra bid" offered by cooperatives intervening in markets with insufficient competition. The extra bid restored the freedom of choice that defined farmers as independent entrepreneurs.

Market exploitation created a gulf between farmers and the rest of the economy, evidenced by a 1922 editorial in *Successful Farming* (1922:8):

Just as sure as the packers, the great bankers, the leading manufacturers or the big corporations propose something that their business experience has shown would be beneficial to ... the farmers ... the farmers assume an aloofness that is dramatic.

Five decades later, cooperatives continued to resist partnering (e.g., joint ventures) with non-cooperatives: "The natural thought is, 'Why don't they let us alone in agriculture?'" (Ingalsbe, 1973:24). Because they emphasize service more than profits, cooperatives have often stressed their difference from mainstream firms. A self-protective cooperative retreat from the marketplace is probably the ultimate expression of "difference" in a capitalist economy.

Small and insular cooperatives were the ideal according to the competitive yardstick norm. Small cooperatives were more easily controlled by producer-members. Moreover, such cooperatives were less likely to spawn cooperative monopolies. This view of cooperation supported modest goals, such as adequate facilities supported by adequate finances (Stokes Jr., 1957). Cooperatives with these characteristics tended to stay close to members and minimize market involvement by doing just enough grading and sorting to move the commodity on to the next level of resale or to processing.

Nevertheless, over time, as agricultural productivity and market potential expanded, it was evident that small cooperatives would have difficulty meeting the needs of diversified and expanding farm operations. By the late twentieth century, multi-commodity regional cooperatives like Land O'Lakes (Minneapolis), Countrymark (Indianapolis), Agway (Syracuse) and Farmland (Kansas City) expanded toward "full service cooperatives" covering members' needs for a variety of commodities (Black and Knutson, 1978:180).

Who will control U.S. agriculture?

Ongoing concentration and centralization within the non-cooperative sector in the second half of the 20th century heightened cooperative concern that producer-members were losing irreplaceable markets. For this reason, the long-anticipated industrialization of the pork industry based on the mid-century model developed for poultry was a watershed development for cooperatives. In the Midwest, hogs were considered "mortgage lifters," a lifeline for family farmers and an economic rationale for multiple cooperatives, both locally-owned (locals) and regional (regionals), who supplied pork producers with feed, feeder pigs, vitamins and technical support. Seeing industrialization at their doorstep, cooperatives of the early 1970s started to define structural change as an all or nothing battle marked by the question of "Who will control U.S. agriculture?" (North Central Regional Extension Publication 32, 1972; Black and Knutson, 1978).

Industrialized, integrated pork production did not proceed from strength to strength: trial and error were inevitable. The initial understanding of how to limit disease transmission among large animals kept in confinement supported production organized as "farrow to finish"—hogs were raised from birth to slaughter weight in a single large confinement facility (such facilities are colloquially known as "pork buildings"). As knowledge of disease transmission improved, production methods like segregated early weaning (SEW) encouraged multi-site production. Finding satisfactory lean genetics was difficult because lean breeds reacted to the stress of confinement by producing unpalatable, soft, watery retail cuts indicative of PSE (pale, soft, exudative) syndrome.

In key respects, industrialized agriculture resembled the emerging industries defined by Porter (1980). Firms in newly established industries typically experiment with processes and technologies because no single practice has been endorsed as the industry standard. The uncertainty characteristic of emerging industries gave cooperatives reason to believe that modernizing and upgrading the facilities and techniques of small producers in particular might allow them to hang on, if not survive and prosper.

Accordingly, Land O'Lakes, Farmland Industries, and Countrymark, Inc., developed cooperative variations of a "pork system" replicating key advantages of integration such as standardized genetics, pork buildings and technical support. These systems included a market element: regional cooperatives relied on locally-owned cooperatives to market feed and feeder pigs to pork producers, efforts that were complimented by collectively-owned slaughter and processing plants. The pork system developed by Land O'Lakes included a price floor to protect member producers from price risk.

Transition to new cooperative values

Cooperative intervention in the pork industry was motivated by the belief that members would be worse off if integration forced formerly independent family farmers to become contract growers subject to anonymous corporate authority (Hogeland, 2010). Cooperatives went to great lengths to buffer members from industry upheaval and transformation. Yet, so many facets of the industry were changing simultaneously that it was hard to pinpoint where and how cooperatives were making a difference. By the mid-1990s, economists questioned "whether traditional commodity producers can re-invent themselves into a 'pseudo-industrialized' structural arrangement that can compete with the costs and quality of the market-leading big players" (Drabenstott, 1995:21).

Nevertheless, significant cooperative involvement continued until, at the end of 1998, a temporary shortage of industry slaughter capacity caused hog prices to plummet to 16.5 cents per pound. The break-even price was 36-40 cents per pound. Integrated systems are vulnerable to bottlenecks causing interruption in the continuous flow process from farm to slaughter. The Land O'Lakes member contract provided a floor price which protected members from the full impact of the price collapse. However, losses of \$26 million ultimately led the cooperative to transition out of providing a floor price (Hogeland, 2006). Cooperative survival became more important than maintaining farmer control over agriculture. The question of how to survive changed how cooperatives related to producers and the market. Cooperatives realized they could no longer go against the tide: they had to become part of industrialized agriculture. Competing by creating innovative value-added products, a particular focus of industrialization, would serve farmers better than resisting market evolution.

With this came a fundamental change in the meaning of cooperation. Cooperatives began to be seen as investments which had to be competitive with producers' other investment choices.

Simply put: cooperatives had to make money. This new standard reduced the power of the competitive yardstick norm to compel cooperatives to rectify situations like, "I need a market for my perishables today!" Cooperatives began revising producer' expectations: "We are service oriented. The patron is boss and we must provide a return for the patron's investment" (Richards, 1978:280).

Further demands on capital came from a new understanding of cooperative market potential. In 1922, Nourse (1922:597) observed that, "The farmer's need of capital in his own business dictates that he go no farther afield than necessary in marketing or processing undertakings." Decades later, capital-starved cooperatives explained the constraints on their vision by alluding to contemporary debate over the high cost of food. The 1971 edition of *American Cooperation* stated that the

introduction, promotion and advertising of so-called new foods did little more than to add to the cost of food. Said the commentator, "There are very few really new products—with frozen orange juice, instant mashed potatoes and now a new fried milk curd product being the only real new food products" (Behre, 1971:248).

A year later, Harvard analyst Ray Goldberg chided cooperatives for not finding more market potential among the 5,000-6,000 products customarily sold by retailers (Goldberg, 1972:5). He attributed farmers' marketing ignorance to too many dollars spent promoting basic agricultural products and too few on measuring the impact of advertising, research and product development. Goldberg recommended that cooperatives' business partners compensate for farmers' market isolation. Reflecting the need for change at the farm level, cooperatives began urging producers to see themselves as part of the developing food system:

As a matter of survival, [their operations need] to be viewed less as an independent family farm, isolated from the market and oppressed by stronger economic forces, and more as a production division of a cooperative enterprise complex and powerful enough to profitably do battle in the final marketplace (Editor's Corner, 1972:2).

Benchmarking

The protected sanctuary of Nourse's "good fort Competition" began to yield to market forces (Nourse, 1945:36). This gave prominent cooperative executives scope to address the cultural disconnect between cooperatives and other agribusinesses. First came recognition that the concept of cooperative difference could be too exclusionary. In 1998, Cenex Harvest States CEO Noel Estensen remarked (Estensen, 1998:12),

We have emphasized that 'we're different' for so long that we seem to have forgotten we're on the same field with the Cargills and ConAgras of the world. But they're out there and they're after our customers!

Study of the evolution of the modern industrial enterprise led Alfred Chandler to conclude that managerial decisions determined whether a firm would be an industry leader, a follower, or a laggard (Chandler, 1990). Nourse developed the competitive yardstick norm in part to identify the place or role for cooperatives within American enterprise. By the end of the 20th century, cooperative executives began developing a vision (or grand narrative) of organizational potential by bench-marking or measuring cooperative aspirations and performance against those of world class agricultural firms such as Cargill, ConAgra and Archer-

Daniels Midland (ADM). In 1998, Land O'Lakes announced that it would build a "world-class aligned pork system" for small producer-members. As part of its plan to become a "total food/agricultural company," Land O'Lakes became the third-largest beef-packer and sought to become the largest North American feed supplier (Lauck, 2000:122). Farmland Industries' goal was "Out-Cargilling Cargill" (Hogeland, 2008:365). Noel Estensen used the slogan "from the Back 40 [acres] to Aisle 40 [of the supermarket]" to position Cenex Harvest States as an integrated unit from producer to consumer (Hogeland, 2006:72).

Canadian cooperatives sought similar prominence. Management and board members anticipated that the Saskatchewan Wheat Pool could become "the ConAgra of the North" (Fulton and Larson, 2009:10). These ambitions signaled managerial consensus with George Sinner's 1999 observation: "One of the great tragedies in the co-op movement is the failure to think big enough" (Sinner, 1999). In the decade that followed, cooperatives continued to expand their goals and outlook. For example, Land O'Lakes sought to apply its broad-spectrum strengths in food production and branded-product marketing to the task of 'feeding the world' (Policinski, 2010).

The competitive yardstick norm argued that gaps in local competitors' performance would reveal how cooperatives could improve the market; changing the base of comparison to world-class agribusinesses was an extension of this concept. Continued cooperative emphasis on relative performance was an acknowledgement that cooperatives were more like other firms than different. Moreover, identifying with other agribusinesses allowed cooperatives to move beyond an agrarian and populist legacy which saw cooperatives primarily as an expression of farmer resistance to the current economic system. As Ocean Spray CEO Randy Papedellis observed, "Anything they can do, we can do" (Papedellis, 2007, author interview).

Resource redefinition

For most of the twentieth century, cooperatives defined farmers as a scarce and critical resource because they depended on farmers to be their members. Yet, farmers were rapidly leaving agriculture. In the 1930s, farmers represented some twenty-five percent of the population; by 2000, this figure declined to less than one percent. Agrarians seem to have ignored the implications of farmer readiness to adopt productivity-enhancing technologies—an area where, unlike marketing, farmers clearly had some degree of choice. But economists noticed. Brewster commented, "even though he [the farmer] may thus live under the very crack of doom, no article of faith is more deep seated than his unquestioning identification

of technical advance with progress. Though it slay him, yet will he trust it" (Brewster, 1959:1177). Severe farmer attrition ultimately made the concept of continued farmer control over agriculture untenable.

For most of the twentieth century, agricultural cooperatives (as a group) regarded independent family farmers as their primary resource and developed marketing infrastructures to support them. As industrialization triggered farmer exit from agriculture, cooperatives buffered producer-members from the impact of structural change (the message of the competitive yardstick norm) while striving for the consumer market impact recommended by industrialized agriculture.

The ideological and economic strain of fulfilling conflicting mandates allowed cooperative managers to see the cost or consequences of holding on to traditional values when the external world was changing. North (1990) predicted that resistance to generally accepted values and norms would increase transaction costs. Cooperative efforts to make industries more competitive, that is, challenging the way the market structure was evolving, contributed to excess agricultural infrastructure (Hogeland, 2006). Cooperatives like Ocean Spray realized they could no longer afford the control of going "from bog to bottle." Similarly, John Johnson, CEO of CHS Inc., observed that, "Succeeding today is more about getting the job done than owning the entire infrastructure" (Johnson, 2003:31).

Growing recognition of the costs of excess competition among cooperatives encouraged the late twentieth century cooperative system to become value or profit oriented, no longer focused on rescuing producers from a particular economic destiny (Hogeland, 2008).

Serfdom?

Fieldwork conducted by Rich (2010) in the Midwestern pork industry from 1998-2001 suggests that the producer "serfdom" anticipated by agrarians did not occur. By arguing that grower exploitation is a potential outcome of contracting's hierarchal organization, Rich starts from a Marxist framework compatible with the U.S. agrarian position. Growers sell their labor to the owner of the hogs they raise, receiving a piece-wage rate adjusted for production risks and costs. The contractor establishes the kind of animals they raise, how they raise them, and how and when the animals are marketed.

Rich also notes the disadvantages of contracting for contractors. They must supervise many growers with many animals. Because contractors cannot fully monitor grower behavior, the contracting relationship is vulnerable to moral hazard. Incorrect or unauthorized actions by growers may not be readily detectable

by contractors. Thus, contractors who exploit growers risk a counterproductive backlash capable of raising costs and decreasing profitability.

Although both contractors and growers recognize the potential for inequality and conflict in their relationship, Rich concluded that trust, honesty and personal integrity are more associated with contracting than conflict. Of 27 contract operations he studied, 20 were farm based, following existing lines of friendship, neighborhood, work, and kin. These close and natural associations allow Midwestern family farmers, contractors and growers alike, to manage their participation in "exploitative agriculture development more generally" (Rich, 2010:109).

Conclusions

For most of the twentieth century, agrarian-oriented cooperatives viewed family farmers as a scarce and critical resource. Pressure from a competing production model, industrialized agriculture or factory farming, threatened farmer-owned cooperatives with the loss or demise of family farmers, and with that, cooperative demise. Cooperatives' agrarian frame of reference limited their ability to understand how they could benefit from industrialization.

Agrarian ideology anticipated that farmers who participated in industrial agriculture through contracting would be excluded from entrepreneurial decision-making and restricted to manual or wage labor based on piece-wage rates. To retain farmers' entrepreneurial decision-making capacity (and farmer control over agriculture), agrarian ideology urged cooperatives to resist industrialization by restoring markets lost to structural change.

To suggest how cooperatives came to terms with industrialization, this study offered an inductive framework based on three hypotheses influenced by resource dependency theory. Theory regards the primary task of the firm to ensure its survival by maintaining access to scarce and critical resources. For most of the 20th century, cooperatives arguably regarded family farmers threatened by industrialization as a scarce and critical resource. Cooperatives tried to protect these farmers by increasing their marketing choices and, in the industrialization of the pork industry, providing a price floor to buffer them from structural change. These efforts were not sufficient to forestall producers' exit from agriculture.

Agrarian ideology had several potent weaknesses. It did not take into account how farmers' receptivity to new productivity-enhancing technologies contributed to farmer attrition. The "serfdom" anticipated by agrarian ideology did not emerge. Instead, contracting's (overlooked) potential for moral hazard encouraged

contracting relationships to be based more on trust, honesty and affinity than on exploitation.

Agrarianism's ideological weakness enabled visionary cooperative managers to propose a new ideology for U.S. cooperatives based on global market leadership. A similar ideological adjustment occurred within the Irish dairy industry. Moreover, resource constraints can encourage firms to change the resource considered scarce and critical. By the end of the 20th century, capital had become cooperatives' scarce and critical resource, an adjustment which enabled cooperatives to participate in capital-intensive industrialized agriculture. Overall, evidence suggests that cooperatives' adjustment to industrialization was a function of critical resource changes, managerial vision and ideological change.

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