USDA Rural Development

Committed to the future of rural communities.

United States Department of Agriculture

Rural Business–and Cooperative Programs

Research Report 221

Cooperative Theory, Practice, and Financing: A Dairy Cooperative Case Study

Abstract

Cooperatives are the aggregates of economic units, such as farms. The cooperative is neither a horizontal integration of its member-farms nor a vertical integration between member-farms and the cooperative, but rather a third mode of organizing coordination. Cooperatives are owned, controlled, financed, and used by members for mutual benefits, with service at cost and proportionality being two basic principles. Farmers organize marketing cooperatives to access markets, exercise countervailing power *vis-à-vis* other market participants, promote competition, and thus enhance market efficiency. Cooperation as practiced by dairy farmers in marketing milk is an enduring business model that is in full accord with the economic theory of what cooperatives are and what cooperatives do. Members supply equity capital needed for the cooperative to carry out its core business of marketing members' milk. Capital financing, in general, is not a contentious issue for dairy cooperatives. For other cooperatives that have difficulties in raising capital from members, the issue is really a reflection of a certain gap between member purposes and cooperative functions. The solution lies in assessing what members want the cooperative to do and how much they are willing to finance it; the cooperative should operate accordingly for members' best interests. Social entrepreneurs have renewed interests in adopting cooperatives as an economic development tool to empower people to work toward their own economic destiny. Over the long term, cooperatives must be self-sustainable in order to be economically viable.

Key Words: Cooperatives, dairy, milk, cooperative theory, competitive yardstick, countervailing power, capital, financing, social entrepreneurs.

Cooperative Theory, Practice, and Financing: A Dairy Cooperative Case Study

K. Charles Ling
Agricultural Economist
USDA Rural Development

Research Report 221

April 2011

Cover photo courtesy Kroger and Michigan Milk Producers Association.

Preface

This study speaks to some recurrent issues regarding cooperative capital financing, such as those raised by participants at the USDA Rural Development Public Forum on Cooperative Research in 2005.

Cooperatives face many capital financing challenges. By the very nature of being a cooperative, its equity capital is provided by members and is limited by their financial means and their willingness to support the cooperative's undertakings. This may narrow the cooperative's scope of operation and expansion.

Furthermore, there are equity redemption issues. Members' equity capital held by the cooperative represents a substantial sum of their money. This competes with members' capital needs on the farm. Members tend to not favor a long equity revolving period, because the present value of revolved equity is diminished after being discounted.

When a cooperative's business is doing well, some members may perceive that its market valuation is higher than the book value and want to have access to the gain. This may force selling off the cooperative or converting it to a public corporation.

To overcome these challenges, alternative capital financing methods have been variously implemented, such as new-generation cooperative capitalization, issuing preferred stock, accumulating (unallocated) retained earnings, and changing State laws to allow non-member capital.

This report addresses some of the challenges faced by cooperatives and the issues raised by the alternative financing methods used. First, the classic literature on the economic theory of what cooperatives are and what they do in the market economy is reviewed. Then, a case study is presented on dairy cooperatives as a group to showcase the theory in practice. The case study serves as a knowledge base for answering questions regarding cooperative capital financing issues.

Contents

List of Tables

Highlights

Dairy cooperatives as a group are the most prominent among farmer cooperatives in terms of sales revenue and the important roles they play in the dairy industry, a major sector in agriculture. Their mission, functions, organization, governance, operations, market performance, financing, etc., are in full agreement with the economic theory of what cooperatives are and what cooperatives do (the classic *raison d'être* of cooperatives). The case study shows that financing the core business of marketing members' milk is generally not a contentious issue for dairy cooperatives. Capital financing could become an issue if a dairy cooperative embarks on ventures that are considered by members to be extraneous businesses.

Underpinning the case study are two epoch-marking treatises on the theory of the cooperative. “Economic Philosophy of Co-operation” by E. G. Nourse was the first academic paper on the theory of cooperation, published in the *American Economic Review*. Ivan Emelianoff's book, *Economic Theory of Cooperation: Economic Structure of Cooperative Organizations*, was the first work in the economic literature to give the cooperative its precise economic definition.

Nourse's economic philosophy of cooperation may be summed up in a nutshell: Cooperatives make it feasible for farmers to jointly market their products. The cooperative may evolve to a scale large enough to effectively bargain with other market participants and/or to avail itself of scale economies in processing and marketing operations. Subject to the same market disciplines and supply-demand-price dynamics as any business, the presence of the cooperative challenges other market participants to operate efficiently and thus strengthens the competitive market mechanism. When the market for members' products has become truly competitive, the cooperative may want to assume only a stand-by position but maintain the legal institutions and organizational capacity to re-enter the field, if necessary.

Emelianoff's theme was that for economic analysis of cooperatives, the economic structure of cooperative organizations should be clearly defined and that the definition should be free from the encumbrance of sociological, legal, technical, social-philosophical and ethical considerations. He established this definition: “Cooperative organizations represent the aggregates of economic units.” In the agricultural context, farms are such economic units.
Being aggregates of member-farms, cooperative associations have these characteristics in common:

- The equity capital of a cooperative is the sum of advances needed for financing anticipated transactions of individual members of the cooperative.
- The member-owners of a cooperative are independent farmers who have chosen to coordinate certain activities via a cooperative.
- The surplus or deficit of a cooperative is the account payable to, or receivable from, the member-patrons of the cooperative on their current transactions.
- The sum for patronage refunds to members is the sum either underpaid (overcharged) to members, or—in case of a deficit—overpaid (undercharged) to members on their transactions through the marketing (or purchasing) cooperative.
- The dividend on capital, if any, is the interest payment for using capital advanced by members, not a distribution of income.
- All the economic functions of a cooperative are ultimately the economic functions of the member-farms performed through the cooperative as their collective branch. Therefore, all economic services of cooperative association are performed at cost.

The theory as expounded by Nourse is from the perspective of market performance of cooperatives. Emelianoff's thesis delineates the economic structure of cooperatives and the governance, financial, and functional corollaries. Market performance and economic structure of dairy cooperatives are shown to be as prescribed by Nourse and Emelianoff. (Table 2 in this report (page 11) summarizes their salient points and makes a side-by-side comparison to dairy cooperative practice.) Cooperation as practiced by dairy farmers in marketing milk is an enduring business model that is in full accord with economic theory.

Just like any other business firm, dairy cooperatives require an adequate level of capital to market members' milk. Besides bargaining/negotiating for milk prices and terms of trade, they may own and operate milk-handling facilities, do value-added processing, and/or provide milk marketing-related and other member services, as the case may be. However, member equities are the source of capital of dairy cooperatives. A cooperative's ability to raise capital is thus constrained by members' financial resources. Equities of dairy cooperatives comprise common stock, preferred stock, retained earnings, and allocated equities (such as retained patronage refunds, capital retains, base capital, etc.)

Members are usually supportive of the financing need if the capital requirement is for the cooperative to carry out the milk marketing functions they want it to perform. A cooperative may face financing issues if it attempts to invest in extraneous businesses unless the members are convinced that the new ventures would:

- solidify the market for members' milk, or
- help market members' milk, or
- add value to members' milk, and
- benefit members the most among all available alternatives of investing the capital.

Some dairy cooperatives have tried alternative equity financing methods to leverage cooperative members' capital commitment. They have tried structuring subsidiaries as public stock corporations or as limited liability companies, having joint ventures with other firms or organizing as a new-generation cooperative. A few have issued preferred stock for quite some time, mostly to members.

The solution to capital financing issues lies in assessing what members want the cooperative to do and whether they are willing to adequately finance it. A cooperative must be self-sustainable in order to be economically viable over the long term.

The experience learned from the case study of dairy cooperatives provides some answers to the frequently asked questions concerning cooperative capital financing, such as those raised by presenters at the USDA Rural Development Public Forum on Cooperative Research in 2005. The issues are addressed by individual subject matter in the table below.

Financing issues	Some abridged answers
Member equities: Cooperative equities are furnished by members and therefore are limited. How does a cooperative gain access to capital without incurring long-term debt, without selling off the cooperative, or without going public: ● When the cooperative needs more capital? ● When members agitate to gain access to the perceived high market value of the business? ● When pressure mounts to shorten the equity revolving period?	Members organize or join a cooperative to market their farm production. They should provide the cooperative with capital at a level that is commensurate with the functions they want the cooperative to perform and the benefits they want to derive from it. If market value of the cooperative is higher than the book value, it means the cooperative's earnings and potential future earnings are higher than can be expected, given its level of equity capital. Members gain access to this higher earning ability by receiving higher pay prices, premiums, and patronage refunds. Selling off the cooperative to gain the value of the business is tantamount to "killing the goose that lays the golden egg." Eventually it is up to members to decide if they want the cooperative to be viable or if they prefer other alternatives.
New-generation cooperatives: Are they the answer to cooperative financing issues?	A new-generation cooperative requires members to pay equity up front to acquire the delivery rights. This cooperative model has its own issues, especially those concerning delivery rights and property rights. In addition, many new-generation cooperatives are organized for business opportunities that resemble venture-capital investment. They tend to process one product or a narrow range of products. This presents additional risks as compared with a cooperative that is organized to market members' product(s) through a variety of marketing channels.
Preferred stock: What effects might issuing preferred stock have on a cooperative's practice?	The effects preferred stock may have on a cooperative's practice depend on what rights are specified. Preferred stock that pays dividends and has preference in assets over common stock in the event of the dissolution of the cooperative—the most common type of preferred stock—probably would not have any impact.
Retained earnings: Many cooperatives expand non-member businesses to accumulate retained earnings as permanent equity. What might be the long-term effects of this practice on governance?	Cooperatives may have non-member business for various reasons. In any case, retained earnings belong to the cooperative and thus are jointly owned by members. However, a cooperative would not be conforming to the Capper-Volstead Act requirement if its non-member business were to exceed 50 percent of total sales.

Outside (non-member) capital: What changes in governance, organizational structure, and practice may be brought about by the new cooperative laws enacted by some States that allow outside equity capital?	There is a large variation regarding voting power and earning distribution, etc., among the few State laws that allow cooperatives to have investors. Differences in governance and earning distribution rules will influence cooperative organizational structure and practice. It is better to analyze them on a case-by-case basis. Furthermore, not every cooperative newly incorporated under these State laws has investors.
Untapped equity in rural America: How plausible is the contention that there is a lot of untapped equity in rural America that cooperatives just do not have access to and that should be allowed to be invested in cooperatives?	If the farm sector equity is any indication, it is not clear how much of it is untapped or available for off-farm investment. The equity-to-asset ratio of the farm sector is between 88 and 90 percent during the 5-year period 2006-2010. About 96 percent of the assets are in land and real estate and farming assets. Only around 4 percent of the assets are in financial assets, and they may not be available for off-farm investing. No comparable financial data for rural America is readily available, but recent assessment of the state of the rural economy shows that it faces significant challenges. It is highly unlikely that there is a lot of untapped equity to be found in the rural area.

Cooperative Theory, Practice, and Financing:
A Dairy Cooperative Case Study

K. Charles Ling
Agricultural Economist
USDA Rural Development
Rural Business and Cooperative Programs

Introduction

Cooperatives need capital in their normal course of operation. Furthermore, marketing value-added products and the capital-intensive nature of modern operations also bring up financing issues. In addition, modern technology is usually embodied in new plants and equipment that require a large volume of throughput to achieve economies of scale and also a large sum of capital investment.

There is always an internal tension between a cooperative's need for equity capital to carry out its functions and the members' need for financing their farming operations and for living expenses. It is not unusual to hear laments that "our cooperative is not able to leverage its strong brand for potentially lucrative market growth due to the constraints of member equity financing."

Indeed, cooperative financing was prominently mentioned as one of the major subjects that require research attention by most presenters at the USDA Rural Development Public Forum on Cooperative Research (*U.S. Department of Agriculture, 2005*). The following list summarizes the cooperative financing issues raised at the forum:

1. The chief obstacle facing farmer cooperatives is the lack of access to sufficient capital to fund their organizations in this new, expanded and globalized marketplace. Because equity capital is furnished by members and therefore is rather limited, how does a cooperative gain access to capital without incurring long-term debt?
2. When a cooperative is successful (profitable), its perceived market valuation may be worth more than the book value. This may agitate some members to demand cashing in the appreciated value. How does a cooperative accommodate such demand and provide a vehicle for members to gain access to the value of the business without selling the cooperative or going public?
3. Some cooperatives face equity redemption issues. Others have attempted to restructure the cooperative in order to have more room for raising capital. Are there alternatives short of selling the cooperative or going public?
4. The advent of new-generation cooperatives that would confer delivery rights commensurate with tradable membership shares seems to offer a promising alternative for financing cooperatives. Are new-generation cooperatives the answer?
5. One of the ways to access capital is by issuing preferred stock. What effects might this have on a cooperative's practice?
6. Many cooperatives are expanding non-member business to generate profits that can be held in permanent equity within the cooperative. What might be the long-term effects of expanded non-member business on cooperative governance?
7. Cooperative laws in some States have been changed to allow outside (non-member) equity capital. What changes in governance, organizational structure, and practice may be brought about by these new laws?
8. Some contended that there is a large amount of untapped equity in rural America that cooperatives do not have access to and that should be allowed to be invested in cooperatives. How plausible is this contention?

To set the stage for addressing these cooperative financing issues, it is useful to refresh our understanding of the cooperative basics—the unique characteristics of the cooperative form of business: what cooperatives are, what they do, how they do it, what their role is in terms of market performance, and how their operations are financed. To show the relevance of cooperative theory in practice, dairy cooperatives are used as a case study. The lessons learned will provide some useful insights for answering the above questions.

Economic Theory of the Cooperative

For reviewing cooperative basics, the narratives of two epoch-marking treatises on the economic theory of the cooperative are presented: one on the cooperative's roles in the marketplace and the other on the economic structure of the cooperative.

"Economic Philosophy of Co-operation" by E. G. Nourse was the first academic paper on the theory of cooperation, published in the *American Economic Review (Nourse, 1922; Hess*). This piece, supplemented by the oft-quoted "brief remarks" he made years later (*Nourse, 1945*), is the basis of the first narrative.

The second narrative is drawn from the ideas of a book by Ivan Emelianoff, *Economic Theory of Cooperation: Economic Structure of Cooperative Organizations*. This book was the first in the economic literature to give the cooperative its precise economic definition, and his work marked the beginning of a new era in the development and evolution of cooperative theory.

Cooperative Basics I: Cooperation for market efficiency

Nourse's primary focus was on the role agricultural cooperatives played in the marketplace. This arose from his observation that the attempt to apply the cooperative form of organization to economic needs and problems in agriculture was critically important.

Purposes of cooperation. The following examples are taken from Nourse's paper to illustrate how farmers organize cooperatives to perform various market functions jointly and efficiently in various market situations—functions that cannot be satisfactorily carried out alone by individual farmers:

1. Cooperation for market access—An example is a small fruit-producing area far from any large market. The product is perishable, hence both risk and marketing expense are high. Total product volume is not large enough to attract a private distributor. Facing this situation, producers have the option of organizing a cooperative association to market their products. These cooperatives have frequently demonstrated the ability to achieve successful results where private, outside entrepreneurship fails to perform.
2. Local to regional coordination—A local cooperative creamery may initially be effective in meeting the competition of other small, private creamery operations. However, when competing creameries have grown to be entities of great size, the competition must be met by a distributing organization of equal scope. This will often be achieved through a federation of the cooperative creameries across a region which may embrace an entire State, several States or parts of a State.
3. Region-wide associations—In many instances, growers in horticultural regions have organized and integrated highly efficient businesses that serve producers across an entire production region by assembling, processing, and distributing their products. These agencies have eliminated wasteful competition both at the local shipping point and at the central markets. Furthermore, they are the instruments of the producer and owner of the goods, and hence are likely to be more aggressive in the effort to reduce expense and wastage in the handling process and to improve quality and enlarge outlets.

(Author's note: Cooperative organizations covering entire production regions have been most prevalent in California because of the characteristics of the State's economic geography. This type of cooperative organization was called "the California plan" and was promoted on a national scale in the 1920s by Aaron Sapiro, with varying degrees of success and failure (*Sapiro; Larsen, et al.).*)

Countervailing power. The above examples show how cooperatives are organized and grow to enable farmers to exercise "countervailing power" in the marketplace, although the term was not coined until the 1950s, when economist John Kenneth Galbraith cited the type of cooperatives made famous by Sapiro as an example for his explanation.

Nourse certainly recognized the importance of countervailing power if cooperatives are to have a

strong market position. As he stated: "Possibly the keynote of the philosophy lies in the idea that a means must be found for giving agriculture a type of organization whose productive and bargaining units respectively will expand in step with the growing needs of the agricultural techniques (and its accompanying capital demands) and of the size requisite to an effective bargaining position in contact with the units of commercial organization with which they must deal."

Pro-market. Nourse said that the theoretical implication of agricultural cooperation "is preeminently that of functional reorganization rather than comprehensive economic regeneration." In other words, the farmer takes the essential facts of the market as given and, working together with other producers through the cooperative, seeks to be in the most effective market position to compete. Thus, the distinctive economic philosophy of this business form is viewed "as a means to improve the lot of both farmer and consumer by improving the efficiency of the economic machine."

Cooperatives enable farmers to effectively compete in the marketplace and garner market signals that put them in a position of prompt and sensitive response to the reaction of the consuming public and guide their farming business decisions. According to Nourse, the cooperative objective is twofold (*Nourse, 1945*):

1. "It is to make the most economical and efficient market channel by which whatever volume of product farmers see fit to produce gains access to the attention and the purchasing power of all who might use such a product. (For supply-buying cooperatives, most economical access to the best sources of the goods they need.) Thus, a true supply-and-demand price is allowed (and aided) to express itself for the guidance of producers."
2. "It aims to reflect these market conditions back most promptly and fully to producers in ways that will both guide and, so far as possible, assist them in changing their methods so as to continue production and to prosper or to shift to more suitable lines of production."

Competitive yardstick. In Nourse's view, the cooperative is a means for promoting and maintaining competition in the marketplace. The supply-demand-price dynamic "provides a powerful stimulus to the association to devise further economies of method which will enable them to maintain the level of net returns to the grower. Such competition also spurs the private agency to outdo the cooperative in its efficiency in order to hold its business."

He used the term "yardstick" years later (*Nourse, 1945*), when he said the place for the agricultural cooperative in the Nation's business "is primarily that of 'pilot plant' and 'yardstick' operation. Its objective is not to supersede other forms of business but to see that they are kept truly competitive."

The cooperative is to "occupy certain strategic points, and there to set a plane or pace of competition which will assure for the farmer efficient service at true long-run cost." When such services (manufacturing, distributing, transporting, financing, etc.) are furnished efficiently and economically (which means in a truly competitive manner), "there is no occasion for the farmer to occupy the field and divert some of his capital and some of his managerial time and effort to these tasks and away from his main enterprise of farm production."

Farmers should remain vigilant. Nourse cautioned: "It is of the upmost importance, however, that farmers shall have both the legal institutions and the organizational 'know-how' to step into these fields when and to the extent that service is inadequate or unduly high in cost. It is important also that they remain in each of these fields with an organization sufficiently large to attain high efficiency so that farmers shall be protected against any subsequent lapse in the quality of service or temptation to profiteer in charges by the non-cooperative service agencies.

"But it is just as important that the cooperatives recognize when they have in fact attained their real objective by demonstrating a superior method of processing or distribution or by breaking a monopolistic bottleneck, and that they should then be content merely to maintain 'stand-by' capacity or a 'yardstick' operational position rather than try to occupy the whole field or a dominating position within it. In some cases, they may be well advised in entirely terminating operations once they have stimulated regular commercial or manufacturing agencies to competition amongst themselves."

Nourse's economic philosophy of cooperation may be summed up in a nutshell: Cooperatives make it feasible for farmers to jointly market their products. The cooperative may evolve to a scale large enough to effectively bargain with other market participants and/or to avail itself of scale economies in processing and marketing operations. Subject to the same market disciplines and supply-demand-price dynamics as any business, the presence of the cooperative challenges

other market participants to operate efficiently and thus strengthens the competitive market mechanism. When the market for members' products has become truly competitive, the cooperative may want to assume only a stand-by position but maintain the legal institutions and organizational capacity to reenter the field, if necessary.

Cooperative Basics II: Cooperatives are the aggregates of economic units

While there had been many references regarding cooperative principles, the question "what is a cooperative?" was never clearly answered until Ivan Emelianof took up the task to do it.

In *Economic Theory of Cooperation: Economic Structure of Cooperative Organizations*, Emelianoff carefully reviewed the worldwide literature on cooperative theory from the late 19th century until 1939. He came to the conclusion that for economic analysis of cooperatives, the economic structure of cooperative organizations should be clearly defined and that the definition should be free from the encumbrance of sociological, legal, technical, social-philosophical, and ethical considerations.

Against this backdrop, Emelianoff established this definition: "Cooperative organizations represent the aggregates of economic units." This "bare bones" definition crystallizes the essence of what cooperatives should have in common.

"Aggregate" is commonly defined as: "Any total or whole considered with reference to its constituent parts; an assemblage or group of distinct particulars massed together" (*American Heritage Dictionary*). Further, as defined by Emelianoff: "An economic unit, or economic individual, is an economic body admittedly complete and sufficiently integrated for individual existence and independent (in conditions of an exchange economy—interdependent) economic functioning."

In the agricultural context, farms are such economic units. The nature of cooperative associations as aggregates of member-farms is clearly discernible in the embryonic forms of such associations. For example, a buying club of farmers may want to purchase certain goods together, such as fertilizer.

The buying club would have someone take orders from member-farmers and place orders with a vendor, as well as perform other related chores. If the vendor requires a deposit, members may advance money to the buying club for the deposit requirement in proportion to their respective buying volume.

There may be an elected committee to facilitate decisionmaking if the number of members is large. Each member may have one vote if their purchasing volumes are about the same. Otherwise, some forms of proportional voting may be adopted to conciliate large-volume members.

When the fertilizer (for example) is delivered, members pay the balance of their obligations. After the transactions have been completed, payment to the vendor and other expenses are subtracted from the sum of money paid by members. Any surplus is returned to members in proportion to the volume of fertilizer they have purchased.

This buying service is conducted at cost; every aspect of a member's transaction through the buying club is in proportion to their patronage (buying) volume. The buying club may be disbanded after fulfilling its joint-buying purpose.

This scenario shows that the buying club represents the aggregate of its member-farms, through which they purchase fertilizer. If the buying club metamorphoses into a permanent purchasing cooperative association, the picture may look more complicated. However, the underlying nature of the cooperative as an aggregate of member-farms remains the same.

In this new scenario (i.e., a permanent purchasing cooperative), the person who manages buying orders and other chores will be the manager of the cooperative (usually a hired professional). The committee of members becomes the board of directors. Advanced payments by members to the cooperative become equity capital for financing the operation and for carrying inventories and owning facilities.

Year-end surplus is returned to members as refunds in proportion to patronage volume, but a portion may be retained as revolving capital. The principles of proportionality and service at-cost remain intact, but their practices may be less evident because the operation has become more complex.

Although the above example is based on purchasing cooperatives, the same line of reasoning also applies to marketing cooperatives. The difference between purchasing and marketing cooperatives is: instead of procuring goods, a marketing cooperative markets products produced by member-farms.

In either case, the member-farms coordinate their activities through the cooperative, but each fully retains its economic individuality and independence.

A cooperative may be described as a center of member-patrons' coordinated activities, or as an agency owned and controlled by members through

which they conduct their business. In this respect, it is identical with the special departments or branches of individual member-farms.

For example, a dairy cooperative is the collective marketing arm of its member dairy farms; a farm supply cooperative is their supply purchasing department; and a livestock-genetics cooperative is the breeding service branch for its members. As some would say, "A cooperative is an off-farm extension of the farming business."

Being aggregates of member-farms, cooperative associations have these characteristics in common:

- The equity capital of a cooperative is the sum of advances needed for financing anticipated transactions of individual members of the cooperative; it is not the same as the entrepreneurial capital of an investor-owned corporation.
- The member-owners of a cooperative are independent farmers who have chosen to coordinate certain activities via a cooperative. They are not the same as the stockholders of an investor-owned corporation, who are a diverse set of shareholders joined solely by common investment.
- The surplus or deficit of a cooperative is the account payable to, or receivable from, the member-patrons of the cooperative on their current transactions; this is not the same as the profit or loss of an investor-owned corporation.
- The sum for patronage refunds to members is the sum either underpaid (overcharged) to members, or — in case of a deficit — overpaid (undercharged) to members on their transactions through the marketing (or purchasing) cooperative; the sum for patronage refunds is not the profit of the cooperative or its income.
- The dividend on capital, if any, does not represent a profit or any income of the cooperative; it is the interest payment for using capital advanced by members. By contrast, investor-owned corporations pay dividends to shareholders out of earnings.
- All the economic functions of a cooperative are ultimately the economic functions of the member-farms performed through the cooperative as their collective branch or collective department. Therefore, all economic services of a cooperative association are performed at cost.

Emelianoff emphasizes: "None of such traits can be unreservedly used as an unerring test of a truly cooperative organization, since these traits only indirectly disclose the economic character of the cooperative aggregate…The only comprehensive and indisputable test of the cooperative character of organizations is their aggregate structure."

The unique aspects of cooperative character, however, are often not readily apparent. There are many reasons for this, some examples being:

- Cooperatives only reflect the characters and aspirations of their membership, which are diverse and manifest the diversity of the population, the geographical regions and the commodities involved. Such differences directly, or indirectly, have a certain bearing on the character of an association and its cooperative ideals. The variability of the external characteristics of cooperatives is kaleidoscopic and infinite. Differences in their external and superficial features obscure cooperatives' ultimate economic character of being aggregates of their member-farms.
- Most cooperatives are incorporated. The legal vestments of incorporated cooperative associations also cloak their economic structure as aggregates of member-farms to such a degree that they are often mistaken to be the same as investor-owned corporations. This is one of the principal sources of confusion in understanding cooperative organizations.
- A lack of distinction between the concept of an investor-owned corporation as a profit-seeking economic unit and the concept of a cooperative as an agency of its member farms is another factor that confuses many. Use of common accounting terminology for both business models adds to this confusion. As the above list of cooperative characteristics shows, such conventional terms as "profit," "capital," "shareholders," "dividends," etc., should be used with reservations when describing cooperatives.
- In governance, a cooperative board of directors — including its board election rules, composition, function, responsibilities, and interaction with management — is not the same as the board of an investor-owned corporation (especially the publicly traded ones). Consequently, the role of the top manager of a

cooperative is also somewhat different from that of an investor-owned corporation (even if they have the same title).

Emelianoff's definition that cooperative organizations represent the aggregates of associated economic units provides a clear insight into how cooperatives organize and function.

In a paper dealing with the issue of economic coordination some 45 years later, James Shaffer echoed (though without citing) Emelianoff's definition of cooperatives as aggregates of member-farms. Because member-farms are independent entities, represent independent profit centers, and act independently (except that they jointly own the cooperative), the cooperative association is neither a horizontal integration of its member-farms nor a vertical integration between member-farms and the cooperative. He asserted that "the cooperative is a third mode of organizing coordination."

Summary of cooperative basics

The first narrative on the cooperative basics, following Nourse's work, is from the perspective of market performance of cooperatives. To sum up:

- Cooperatives are organized for efficiently carrying out specific business functions for member-producers.
- Cooperatives can be of any size (and can be local, regional, or national in scope) that allows them to function efficiently in the marketplace.
- Cooperatives afford farmers the organizational sizes that are necessary for exercising countervailing power to effectively deal with other market participants.
- Cooperatives are pro-market; they let the market supply-and-demand price be the guidance for producers.
- Cooperatives are a means for farmers to promote and maintain competition—as the competitive yardstick.
- In those fields where the market has become truly competitive and farmers can be well served by other firms, cooperatives may want to cede the field and assume only a stand-by position (to preserve members' capital, time, and efforts for use on the farm), while maintaining the legal institutions and organizational capacity to step in if there is a relapse of market inadequacy.

The second narrative, based on Emelianoff's theory, delineates the economic structure of cooperatives and the governance, financial, and functional corollaries. In summary:

- Cooperative organizations represent the aggregates of economic units.
- A cooperative is an agency owned and controlled by members through which they conduct their business.
- Each member-farm fully retains its economic individuality and independence.
- The board of directors is elected from among member-farmers.
- Proportionality and service at-cost are two basic principles.
- Members provide advances (i.e., equity capital) for financing the cooperative.
- The surplus or deficit of a cooperative is the account payable to, or receivable from, the member-patrons.
- Patronage refunds are the money returned to members who have been underpaid or overcharged.
- Dividend on capital, if any, is interest payment for using members' capital.
- Being an aggregate of member-farms, the cooperative is neither a horizontal integration of its members nor a vertical integration between the cooperative and its members. It is a third mode of organizing coordination.

Together the two narratives constitute a comprehensive framework for understanding cooperatives—what they are, what they do, how they do it, and their role in the marketplace. In the next section, dairy cooperatives are examined to relate their practice to the theoretical framework and illustrate how well the theory fits the reality, and *vice versa*.

Cooperative Practice—Dairy Cooperatives as a Case Study

Dairy cooperatives' sales of milk and dairy products represented 42 percent of total commodity marketing by all agricultural cooperatives in the United States in 2007, making them, as a group, the most prominent among all agricultural marketing cooperatives (*Deville, et al.*).

Dairy cooperatives also occupy major market shares within the dairy industry, especially at the first-

handler level and in the manufacture of "hard" dairy products (butter, cheese, and milk powders). In 2007, there were 155 dairy cooperatives in the nation. A total of 49,675 member-producers, or 84 percent of the nation's licensed dairy farms, delivered 152.5 billion pounds of milk, or 83 percent of all milk marketed (*Ling, 2009*).

Cooperatives marketed 71 percent of the nation's butter, 96 percent of nonfat and skim milk powders, 26 percent of natural cheese, and 42 percent of dry whey products. Their shares of "soft" and cultured products were less significant: 4 percent of ice cream, 13 percent of ice cream mix, 11 percent of yogurt, and 14 percent of sour cream. They processed 7 percent of the Nation's packaged fluid milk products in 2007.

Mission and functions

Dairy farmers organize cooperatives to jointly and efficiently market their milk. Milk is a "flow" product (cows are milked twice or thrice daily) and is highly perishable; it must be picked up from the farm and delivered to the market (milk plants) soon after it is produced. By working together through their cooperatives, farmers want to have better control over the movement of the milk through the marketing channel and attain higher value for the milk.

The functions and services the farmers demand of their respective cooperatives vary, depending on the specific market situation the members of a cooperative face and their particular needs. Dairy cooperatives may be charged by members with the responsibility of performing one or more (or all) of the following marketing functions:

- Provide an assured market — Typically there is a written or tacit agreement between a member and the cooperative that the cooperative is the exclusive marketing agent of the member's milk.
- Negotiate milk pay price and terms of trade with milk buyers (investors-owned processors).
- Collect and ensure payment from milk buyers.
- Check weights and tests -— To ensure that milk payment a member receives is accurate and commensurate with the quantity and quality of the milk delivered.
- Arrange for milk hauling -— Arrangement must be made to have milk picked up from the farm in a timely fashion and delivered to the plant of first-receipt. This can be performed by the cooperative's own haulers, by contract haulers or by haulers retained by members. The cooperative may also be responsible for setting or negotiating hauling rates.
- Provide field services — Cooperatives typically have field service personnel to assist with on-farm production problems and regulatory and inspection issues for the farm to achieve quality milk production.
- Disseminate market information — Information on the situation and outlook of the milk market is provided to members for use in making dairy farming business decisions.
- Other marketing-related services that help members deal with all the minutiae related to producing and marketing quality milk.

In addition, dairy farmers may ask their cooperative to leverage its group strength to procure various other services to help sustain their farming operations and farm life. Some of the services may be for the cooperative to offer or help arrange:

- Milking supplies and equipment or farm supplies.
- Insurance products — Such as disaster insurance for the farm, health and/or life insurances for the farmer and the farm employees and their families, and farm workers' compensation.
- Retirement programs.
- Risk management services to deal with market uncertainties.
- Farm business consulting services — such as farm expansion feasibility studies and business plans.
- Operating capital and facility capital financing.
- Financial planning services.
- Livestock marketing services — mainly for culled cows and calves.
- Other services that may help members' farming operations.

Organization

Dairy cooperatives can be of any size (and can be local, regional, or national in scope), depending on whatever scale the membership considers to be the most appropriate for marketing their milk.

A small local cooperative may have a few member-farms and market less than 1 million pounds of milk a year. A regional one may have hundreds or thousands of members in more than one State with

milk pounds in the millions or even billions. The Nation's largest dairy cooperative has about 10,000 member-farms that spread over all 48 contiguous States and together deliver tens of billions of pounds of milk.

All dairy cooperatives are known to be centralized organizations with direct membership. A limited number may have other dairy cooperatives as association members, but the practice is usually for accommodating the fact that the cooperative is the marketing agent of all or part of the milk, dairy products, or services of these association members.

Dairy cooperatives operating in the same market may form marketing agencies in-common to rationalize milk hauling and shipment for reducing transportation costs, to share market information, or to collectively bargain with buyers for higher prices for milk or dairy products marketed.

Governance

Members of dairy cooperatives exercise ownership and business controls through a board of directors that is elected from among member-farmers. Candidates for the board are typically nominated by a committee of elected members who are not directors. Elections of the directors are usually done at the annual membership meeting.

If a cooperative is large, in terms of membership or geographical area, members may be grouped into districts (or areas/regions/divisions/locals, as the case may be). Then the directors may be nominated from the district and elected at the cooperative's annual meeting. Districts are usually drawn such that members in the same district are more or less homogeneous, and voting at the district level is typically by one member/one vote. The number of directors each district is entitled to may be different due to proportionality considerations based on milk volume. Some boards may have at-large members.

Also in a large cooperative, a delegate body elected by members may be needed to channel information and make decisions on behalf of the membership. The delegate body may be empowered to represent the membership in all decisions, except for matters that specifically require votes by the entire membership.

A limited number of dairy cooperatives are known to have non-member directors, typically in the States where they are required by law. Non-member directors usually play an advisory, non-voting role on the board.

An executive committee of elected officers and selected board members may be constituted to facilitate decisionmaking when the board is not in session. The board may also appoint several committees to carry out specific board functions, such as audits, finance, membership, and marketing committees.

The board controls the cooperative's business on behalf of members and makes major decisions, sets the policy, and determines the overall direction of the cooperative for the management to carry out in its day-to-day operations. The separation of the responsibility of the board (governance) and the role of management (managing) is often emphasized. Another very important function of cooperative board members is serving as a conduit of communication between the management and the rank-and-file members.

Operations

Dairy cooperatives perform various marketing functions to carry out the most important task of providing an assured market for members' milk. They may engage in one or more of these activities:

- Bargaining—Find a market for members' milk and bargain/negotiate with milk buyers for milk prices and terms of trade.
- Fluid processing—Own or retain plant capacity to process some or all member milk into fluid products. Fluid plants may also process soft and cultured products.
- Niche marketing—Own or retain plant capacity to process some or all member milk into specialty (niche) products.
- Making hard products—Own or retain plant capacity to manufacture hard dairy products. Manufacturing plants also provide a home for milk when it is in excess of market demand and transform the milk into storable products for further processing or later distribution.

Of the 155 U.S. dairy cooperatives, 108 may be classified as bargaining cooperatives because bargaining was their only, or main, marketing activity. Four were fluid processing cooperatives whose business was predominantly in processing and distributing fluid products. Nineteen were niche marketing cooperatives. The remaining 24 may be called diversified cooperatives, having bargaining and one or more processing/manufacturing functions as their main operations.

Besides assuring a market for members' milk, dairy cooperatives may also perform some or all of the other milk marketing functions listed in the mission and functions section above. In addition, they may procure farm supplies or provide other services for

members.

Dairy cooperatives also provide services to milk buyers in accordance with the terms of trade negotiated, such as delivering milk on schedule, maintaining quality control and related laboratory services, preconditioning or standardizing milk, and/or fulfilling full-supply contracts.

Market performance

A cooperative affords dairy farmers the organizational size that is necessary for exercising countervailing power to effectively bargain and deal with milk buyers and other market participants.

The dairy industry has evolved such that dairy cooperatives and processors have developed into what may be characterized as symbiotic relationships, and there is a high degree of "division of labor."

Because dairy cooperatives are organizations of farmers, they have the comparative advantages of working closely with members for assembling milk, providing field services, and performing farm-related functions. It is these advantages that accord them the predominant market share at the first-handler level.

Along with this dominance in milk procurement is the responsibility of balancing milk supply. Many dairy cooperatives maintain plant capacity to manufacture reserve and surplus milk into storable products like butter, milk powders, and cheese. Consequently, they have major market shares of these hard products. Like a reservoir, these cooperative plants absorb milk in excess of demand and provide supplemental milk to the market when it is needed.

Many processors rely on dairy cooperatives for milk supplies that are tailored to their requirements such as volume, quality, composition, and delivery schedule—what are called full-supply contracts—so they can focus their attention on the sectors where they are dominant: making fluid, cultured, and soft products (and lately cheese) and further processing and packaging dairy products for the consumer market. These sectors tend to be capital-, technology-, and service-intensive and are exposed to high product and market risks.

Farmers, who are generally risk-averse and have many demands on their financial resources on the farm, probably prefer to stay out of these sectors rather than compete head-on with processors (their milk customers), as long as the market performs well and their farming business can be sustained.

Still, there is a substantial number of dairy cooperatives operating in these sectors, although as a whole their market share is not high. The upshot is that although dairy cooperatives are generally less active in these sectors, they have the size, organization, and wherewithal to enter the market if the situation calls for it.

As far as dairy cooperatives are concerned, Nourse's prescription regarding market performance of cooperatives still fits the reality very well.

Financing

Based on the complete financial data of 94 dairy cooperatives for the fiscal year ending in 2007, total assets of these cooperatives were $12 billion (or $8.41 per hundredweight (cwt) of milk, table 1). Current assets accounted for 60.4 percent ($7.3 billion, or $5.08/cwt), and fixed and other assets accounted for the other 39.6 percent ($4.8 billion, or $3.34/cwt). These 94 cooperatives represented 61 percent of all dairy cooperatives and marketed 142.9 billion pounds of milk, or 94 percent of cooperative milk volume.

Total liabilities were $8.7 billion. Of which, 72.3 percent was current liabilities ($6.3 billion or $4.40/cwt), and 27.7 percent ($2.4 billion or $1.69/cwt) was long-term debts. Equities, the balance of assets and liabilities, were $3.3 billion ($2.32/cwt).

Dairy cooperatives typically pay members for their milk twice a month. A large proportion of the current assets and the current liabilities are for such pending periodic cash payments to members. This is a unique characteristic of the balance sheet of dairy cooperatives. Therefore, it is important to focus on the ratio of long-term debts to equity in evaluating financial strength, which was 72.6 percent for the 94 cooperatives.

Equities can be grouped into four categories: common stock, preferred stock, retained earnings, and allocated equities.

Common stock. In 2007, common stock only accounted for 0.1 percent of total equities (table 1). This is because common stock of cooperatives is usually issued for witnessing membership and carries minimal nominal value.

Preferred stock. Preferred stock as reported was 7 percent of total equities. A substantial portion of the preferred stock was issued by some cooperatives to members for witnessing retained patronage refunds or for witnessing members' additional investment in the cooperative and may be considered as allocated equities. It is not clear who holds the remaining preferred stock (probably representing less than 5 percent of total equities); the holders could be non-

Table 1—Aggregated balance sheet of 94 dairy cooperatives, 2007

	----$,000----	----$/cwt----	----% of category----
Assets:			
Current assets	7,258,423	5.08	60.4
Net PP&E & other assets	4,609,394	3.23	38.3
Investments in other cooperatives	152,067	0.11	1.3
Assets not categorized	935	0.00	0.0
Total assets	12,020,819	8.41	100.0
Liabilities & equity:			
Current liabilities	6,290,839	4.40	72.3
Long-term & other liabilities	2,409,129	1.69	27.7
Liabilities not categorized	677	0.00	0.0
Total liabilities	8,699,968	6.09	100.0
Equities			
Common stock	1,857	0.00	0.1
Preferred stock	232,595	0.16	7.0
Retained earnings	358,473	0.25	10.8
Allocated equities	2,727,249	1.91	82.1
Total equities	3,320,174	2.32	100.0
Total liabilities and equities	12,020,142	8.41	
Number of dairy cooperatives reporting	94		
Member milk (million pounds)	142,865		

members as well as members.

Retained earnings. Retained earnings could be earnings derived from non-member businesses, but may also include allocated equities that some cooperatives choose not to separately specify in the financial reports, retained net savings that are going to be allocated later, or earnings that are difficult to attribute to specific member transactions. Therefore, retained earnings that are not likely to be subject to allocations (or considered by some to be "permanent" equity) should be less than the reported 10.8 percent of total equities. In any case, retained earnings belong to the cooperative and therefore are owned by members.

In most cases, non-member businesses of dairy cooperatives are incidentals to the dairy operation. These may include:

- Processing into storable products other firms' surplus (distressed) milk that needs to find a home.
- Sales of goods sourced from other firms in dairy stores or other sales outlets.
- Sales of dairy or farm supplies that may include customers who are non-members.

In a limited number of cases, retained earnings are profits from investment activities that may or may not be related to the core business of serving members' marketing and farming needs.

Allocated equities. The 94 cooperatives reported that 82.1 percent of their equities ($1.91/cwt) were allocated to members. Allocated equities are members' capital from one or more of these sources:

Retained patronage refunds: Retained patronage refunds are net savings that are allocated to members based on patronage but are retained to finance the cooperative's operations after a cash portion has been paid to members. Members must treat the entire patronage refunds (retained as well as cash payment) as income for tax purposes. Cooperatives usually revolve retained patronage back to members after a certain period of time.

Capital retains: Some cooperatives use capital retains to finance the operations or more often, for special

projects such as building new plants. Money is withheld from milk payment at a certain rate per hundredweight of milk. Members must treat capital retains as income for tax purposes. Capital retains are also revolved back to members after a certain period of time.

Base capital plan: Some larger diversified dairy cooperatives have adopted base capital plans to establish a more stable equity pool. Under such a plan, a target base capital level is established at a rate per hundredweight of milk marketed during a representative period. The base capital may be funded by retained patronage and/or capital retains, or by other means of member contribution. Once a member attains the prescribed base capital level, future patronage earnings allocated to the member are paid in cash.

Members provide almost all equity capital. Counting common stock, preferred stock (that is issued to members), retained earnings, and allocated equities, almost all equities (probably more than 95 percent) of dairy cooperatives are supplied and owned by members.

Summary—Dairy Cooperative Practice and Theory

Market performance and economic structure of dairy cooperatives are in full accord with the economic theory of cooperation as expounded by Nourse and

Table 2—Comparison of cooperative theory and dairy cooperative practice

Cooperative Basics I: Market Performance	Market Performance of Dairy Cooperatives
Cooperatives are organized for efficiently carrying out specific business functions.	49,675 dairy farmers in 155 cooperatives marketed 83 percent of U.S. milk in 2007.
Cooperatives can be of any size (and can be local, regional, or national in scope) that allows them to function efficiently in the marketplace.	The smallest local cooperative has a few members marketing less than 1 million pounds of milk per year; the largest one has about 10,000 members in the 48 contiguous States and markets tens of billions of pounds of milk.
Cooperatives afford farmers the organizational sizes for exercising countervailing power.	Dairy cooperatives may grow or have grown to the size necessary for effectively bargaining with milk buyers for better prices and terms of trade.
Cooperatives are pro-market; they let the market supply-and-demand price be the guidance for producers.	Dairy cooperatives and their member-farmers are subject to the disciplines of the market in a free economy.
Cooperatives are a means for farmers to promote and maintain competition—as the competitive yardstick.	To be competitive, processors must match the effectiveness and efficiency of dairy cooperatives.
In those fields where the market has become truly competitive and farmers can be well served by other firms, cooperatives may want to cede the field and assume only a stand-by position (to preserve members' capital, time, and efforts for use on the farm), while maintaining the legal institutions and organizational capacity to step in if there is a relapse of market inadequacy.	Dairy cooperatives have comparative advantages in procuring milk and have major shares in making hard products (71 percent of butter, 96 percent of nonfat and skim milk powder, and 26 percent of cheese—the latter decreased from 34 percent in 2002). Their shares are less significant in sectors that are capital-, technology-, and service-intensive and that carry high product and market risks (7 percent of fluid milk, 4 percent of ice cream, 11 percent of yogurt, 14 percent of sour cream. Their share of cheese has also declined in recent years). However, dairy cooperatives have the wherewithal to take up the slack if the market fails to perform well.

Table 2—Comparison of cooperative theory and dairy cooperative practice (Continued)

Cooperative Basics II: Economic Structure	Economic Structure of Dairy Cooperatives
Cooperative organizations represent the aggregates of economic units.	A dairy cooperative is the aggregate of dairy member-farms.
A cooperative is an agency owned and controlled by members through which they conduct their business.	A dairy cooperative is owned, controlled, and used by members as the milk-marketing arm of their dairy farming business.
Each member-farm fully retains its economic individuality and independence.	Member dairy farms are independent economic units, each making its own business decisions.
The board of directors is elected from among member-farmers.	Directors are members; dairy cooperatives may have non-member directors who usually are non-voting advisors and may be mandated by State laws.
Proportionality and service at-cost are two basic principles.	These principles are applied in every facet of operations that relate to member business.
Members provide advances (i.e., equity capital) for financing the cooperative.	Almost all equities are member capital; ownership of a fraction (a portion of preferred stock) is not discernable from the financial statements.
Patronage refunds are returned to members who have been underpaid or overcharged.	Patronage refunds are net savings returned to members.
Dividend on capital, if any, is interest payment for using members' capital.	Dividends, if paid, are usually on preferred stock, and typically at less than 8 percent.
Being an aggregate of member-farms, the cooperative is neither a horizontal integration of its members nor a vertical integration between the cooperative and its members. It is a third mode of organizing coordination.	There may be some degree of coordination among members as they voluntarily and collectively adapt to market situations. However, this is not the same as vertical or horizontal integration.

Emelianoff. Dairy cooperatives' mission, functions, organization, governance, operations, market performance, financing, etc., all conform to the theoretical prescriptions, as table 2 shows. Cooperation as practiced by dairy farmers in marketing milk is an enduring business model that is in full agreement with the economic theory of what cooperatives are and what cooperatives do.

Financing Challenges of Dairy Cooperatives

Equities of dairy cooperatives are provided by members. Therefore, a cooperative's ability to raise and retain capital is constrained by members' financial resources and their willingness to advance funds to the cooperative. Managing this unique way of equity financing inevitably generates some internal tension between members and the cooperative. However, members are usually supportive of the financing need if the capital requirement is for the cooperative to carry out its milk marketing functions. Resistance to contributing more equity capital tends to occur when the cooperative embarks on ventures that are considered by members to be extraneous or beyond its stipulated core business of marketing members' milk.

Member loyalty

For an average member-producer delivering 3.1 million pounds of milk a year in 2007, total allocated equity retained by the cooperative amounted to an estimated $59,000 per member (by using the $1.91/cwt

rate). Because retained equities also include those yet to be revolved back to retired members and inactive (former) members, equities actually retained for active members should be somewhat lower than this estimated amount. Still, the sum of capital committed by a member to the cooperative is very substantial.

Members must treat retained capital, when allocated, as income for tax purposes and pay taxes out of their own funds. Although the retains are revolved back to members as permitted by the cooperative's earnings, the revolving period is usually at least a few years. (One cooperative is known to have a revolving period of 6.5 years, probably the shortest among all dairy cooperatives.) Therefore, the present value of the retained capital is diminished due to the fact that taxes on them have to be paid upfront and that the revolving funds to be received in the future are discounted.

Members' perceptions and attitudes towards retained equities may vary with their respective membership status—whether they are active members, retired members, or inactive (former) members, even though they all usually receive the revolved equities on the same revolving schedule, which is determined by the board of directors.

Active members. Active members may realize the necessity to adequately capitalize the cooperative's operations in order to ensure their milk is effectively and efficiently marketed. Still, retained equities compete with capital needs on the farm. It is only natural that members want as little retains and as short a revolving period as possible. Recent USDA data show the magnitude of capital needs on dairy farms. Among all farm operators, dairy farmers are the most heavily in debt because of the type of inputs used and assets owned. At the end of 2007, 67 percent of dairy farms owed debt that was worth, on average, over $226,000 per farm. Dairy operations accounted for only 2.9 percent of all farms but owed 13.3 percent of reported farm-level debt (*Harris, et al.)*.

Retired members. Retired members may be content with receiving retained equities that are revolved on a steady and regular basis; they may consider such payments as something akin to retirement annuities. However, some may express dissatisfaction that no dividend is paid on the retained equities and the cooperative uses their capital free of charge. And if equity revolving becomes erratic, usually due to the cooperative encountering certain financial difficulties, they may become disgruntled.

Inactive (former) members. Inactive members may be farmers who have discontinued membership in the cooperative and made other milk marketing arrangements, who have exited from dairy farming and transitioned into other farming enterprises, or who have discontinued farming altogether. Conceivably, they are the least satisfied with equities being retained. They may need capital for use in other endeavors. As their loyalty to the cooperative has waned or becomes nonexistent, they may deem it meaningless to have the retained equity sitting idly (from their perspective) in the cooperative.

Core businesses

Like any other business, dairy cooperatives require an adequate level of capital to cash-flow business activities. In addition, it may be necessary for the cooperative to own milk-handling equipment and facilities. They also have to maintain a certain level of equities to satisfy the covenants of lending institutions, because in the course of doing business some debt financing is usually necessary.

Own and operate milk-handling facilities. In addition to bargaining for milk prices, most major dairy cooperatives also perform milk hauling and operate dairy plants. An adequate amount of capital is needed to invest in the necessary equipment and facilities and to finance plant operations and finished-products marketing.

Members generally are receptive to the capital requirements for these activities, because the expenditures are for the functions that address their main concern: that their milk is assured of a market. Milk is moved from member-farms to the market in a timely fashion. Milk supply that is not sold to milk buyers is processed into storable commodity products, such as butter, milk powder, and cheese. Other value-added products also may be processed from the milk.

Value-added processing and marketing. Producing commodity products usually generates low margins. The margins have been further pressured since the early 1980s as the Federal price-support safety net has been lowered. Furthermore, since the beginning of this millennium, the formulas for pricing regulated milk stipulate fixed margins for

manufacturing butter, milk powder, cheddar cheese, and dry whey. These fixed margins are difficult to change even in times of rapidly rising input costs.

For these reasons, for more than two decades many dairy cooperatives have gradually shifted away from making commodity products and put more emphases on operations that add value to milk and milk products, such as making specialty or niche varieties of dairy products, aging or further processing cheese, or extracting milk components for use as ingredients in manufacturing food or beverage products.

However, making value-added products requires additional investment in equipment, technology, personnel, marketing, operations, etc. Some cooperatives, while otherwise successful in making the transition, encountered cash-flow issues because the demand for capital was more than their members could afford. In such a case, a merger with a cooperative that had a broader membership and financial base usually could rejuvenate the business for the benefit of all members.

Some other cooperatives exited commodity processing altogether to concentrate on bargaining operations—usually when their plants needed modernization; a few invested in plants operated by business partners to ensure a home for members' milk.

Still other cooperatives probably did not realize the market had changed, or started the transition too late, or did not have an adequate strategic plan for the transition. They stumbled along, showing erratic financial results and losing members' support in the process. Eventually, they succumbed to the financial stress and filed for bankruptcy, sold off the cooperative, or merged with other cooperatives.

Milk marketing-related and other member services. Field services, market information, and other marketing-related services are usually offered to members as a part of the cooperative's milk-marketing efforts and are accounted for as a part of the cost of doing business.

Other member services—such as insurance, retirement program, risk management, etc.—are usually self-sustaining programs and only require minimal financial support from the cooperative.

Extraneous businesses

Dairy farmers usually will support a cooperative's need for financing if the capital is for a venture that would:

- Solidify the market for members' milk, or
- Help market members' milk, or
- Add value to members' milk, and
- Benefit members the most among all available alternatives of investing the capital.

A cooperative could face financing issues if it invests in ventures that members do not consider to be within the realm of these criteria. Two examples are: investment in seemingly related businesses and investment in extended business ventures. As for the dairy export business, members seem to be ambivalent. On the one hand, they certainly have benefitted from growth in dairy exports. On the other hand, the investment required to develop the export market seems to give them pause.

Investment in seemingly related businesses. An example is a dairy cooperative that is considering whether to acquire a dairy business, which has the following attributes:

1. The dairy products it manufactures are outside the cooperative's current product lineup or competence.
2. Its location is outside the cooperative's membership area.
3. It does not, and will not, use the cooperative members' milk (because of the distance)—dairy inputs for making its products are procured locally and are subject to the local supply-and-demand dynamics.
4. Its major market area for the finished products is distant from the cooperative's trade territory. Thus, its synergy with the cooperative's existing business is minimal.
5. Its production operations require proper expertise to supervise, and the cooperative does not possess this expertise in its existing business.
6. Its consumer products require top management's close attention, which could be lacking if the cooperative's management and control system is not properly structured and staffed.

On the surface, the proposed acquisition appears to be an extension of the cooperative's business of marketing milk and processing dairy products. In reality, it is an investment in an unrelated business; its only relation with the cooperative's existing business is that both are in the dairy industry. It can be said that the investment is not going to help solidify the market for members' milk, help market members' milk, or add value to members' milk. Further, the return on investment is uncertain.

The cooperative may be in solid financial condition and have an adequate amount of member capital to properly market its members' milk. However, investing in the proposed venture is likely to overextend the cooperative's financial resources and jeopardize its sound financial foundation. Because members are usually content as long as their milk is picked up and properly marketed, more member capital contribution for the new venture in all likelihood will not be forthcoming. Under the circumstance, if the board and the management insist on taking on the new venture, they soon are likely to find the venture is causing financial stress, or even the eventual demise of the cooperative. (This is the experience of a cooperative that has recently gone bankrupt.)

Investment in extended business ventures. Some dairy cooperatives may market products that are not derived from milk but are necessary for completing the dairy-related product line, in order to enhance the market position of members' products. Others may use their processing plants to package products such as juices, bottled water, and other non-dairy drinks to more fully utilize equipment capacity and spread the fixed cost. These products usually are incidental to the cooperatives' main dairy business and therefore do not require a significant amount of additional financial resources to support them.

The extended business venture scenarios most often occur outside the dairy cooperative sector, but the lessons could be enlightening for dairy farmers. A typical case is a cooperative that has a successful consumer brand and wants to leverage the brand beyond its core expertise and business. For example, a fruit cooperative could extend its juice brand into other beverages, or a tree-nut cooperative could extend its brand into other snack foods, etc. The assumption is that consumers would faithfully translate their brand loyalty into buying the new categories of products.

However, investment in the extension of the brand may or may not be beneficial to cooperative members. It depends on whether the investment would:

- help solidify the market for members' products, or
- help market members' products — depending on how members' products are incorporated in the product mix, or
- add value to members' products — depending on how the extended categories of products are formulated, and
- benefit members the most among all available alternatives of investing the capital.

Furthermore, competing in the consumer market beyond marketing members' products would require ample additional capital for market research, product development, process design, sales and promotion, and marketing logistics, etc. Often, members' equity is not sufficient to support the extended business venture.

Some cooperatives try to find additional equity capital from outside investors. Other cooperatives could convert into investor-owned firms (most likely as publicly traded companies). Either way, converting the composition of equity capital sources would also change the character and the priority of the organization. In planning such conversions, members should consider whether in the pursuit of profit to placate investors, their production will still be adequately priced and marketed. Members of dairy cooperatives in the United States have not pursued conversion to investor ownership, as have some cooperatives in other commodity sectors. They expect dairy cooperatives to market their milk effectively and efficiently, and little more.

Investment in developing dairy export markets. The United States has not been a major exporter of dairy products on a sustained basis. However, in 2007-08, due to tighter global stocks, drought-induced production declines in Oceania, rising demand in foreign countries, and the weaker dollar, the United States was able to take advantage of significant export opportunities (*USDA/ERS; Ling, 2008*). Commercial exports, on a milk-fat basis, more than doubled from 3.4 billion pounds of milk equivalent in 2006 to 8.7 billion pounds in 2008, or an increase of 5.3 billion pounds in 2 years (table 3). On a skim-solids basis, exports increased by 3 billion pounds of milk equivalent, from 23.6 billion pounds in 2006 to 26.6 billion pounds in 2008.

Export demand raised milk price to an unprecedented high level for an extended period from spring 2007 through fall 2008. The all-milk price reached its record high of $21.90 per cwt in December 2007. This provided incentives for milk production to expand. Meanwhile, the factors that were favorable to U.S. dairy exports lapsed. When the worldwide recession hit in late 2008, milk price plummeted. The all-milk price dropped to $11.30 per cwt in June and July 2009, a decline of more than $10 per cwt from the 2007 peak.

Table 3—U.S. commercial exports of dairy products, 2004-2009

	2004	2005	2006	2007	2008	2009
			-----Billion pounds-----			
Milk equivalent, fat basis						
Milk production	170.9	176.9	181.8	185.7	190.0	189.3
Commercial exports	3.4	3.3	3.4	5.7	8.7	4.5
Export share	2.0%	1.9%	1.9%	3.1%	4.6%	2.4%
Milk equivalent, skim-solids basis						
Milk production	170.9	176.9	181.8	185.7	190.0	189.3
Commercial exports	16.0	19.3	23.6	24.5	26.6	22.4
Export share	9.4%	10.9%	13.0%	13.2%	14.0%	11.8%

Source: USDA World Agricultural Supply and Demand Estimates, November 2010 and various previous issues.

Milk price has since recovered, but price volatility can be expected to continue because of the ever-shifting supply-and-demand situation. Drawing from the experience of high milk prices during the 2007-2008 dairy export boom, some have suggested that to maintain sustained prosperity, the U.S. dairy industry should strive to be a consistent supplier in the export market (*e.g., Innovation Center for U.S. Dairy*).

International dairy trade absorbs about 5 percent of milk produced globally. The trade is primarily in major manufactured dairy products—butter, cheese, and dry milk powders—with some trade in fluid milk products, ice cream, yogurt, and dry whey products (*USDA/ERS*). Although the trade volume of dry whey products is significant, its value is relatively low.

There are basically two approaches to international trade (*Field*):

1. Trading products in the international dairy market. The bulk of the trade is in commodities such as butter, cheese, and dry milk powders.
2. Being a direct participant in the market of a target country. Some multinational firms may have investment in dairy processing facilities and even in dairy farms in the target country to produce products for the local market. Some of the dairy ingredients used in local processing may be imported from other countries by the multinational firm.

Most U.S. dairy exports are in bulk commodities. Because the domestic market is vast, and historically the domestic price level has been high relative to the international prices, the dairy industry tends to regard the export market as the last-resort outlet, while the world treats the United States as a residual supplier. Even the spike in exports in 2007-2008 did not change this basic relationship, although such recent export experience may gradually transform U.S. dairy exporters into more consistent suppliers.

Some of the factors that are required of a consistent exporter are (*Field*):

- In-country contacts and market understanding.
- Competitive pricing.
- Appropriate product range.
- Strong partners (distribution, technology).
- Proactive approach to business development, sales, and marketing.
- Scale and focus of business.

In other words, to be a consistent exporter would require considerable effort and financial resources to develop and maintain the export market. To have members' support, the challenge is to convince them that investing in the undertaking would help solidify the market for members' milk, help market members' milk, or add value to members' milk, and benefit members the most among all available alternatives of investing the capital.

As for becoming a direct participant in the market of a target country, it probably will not happen soon. Although dairy exports have recently shown encouraging growth, the share of U.S. domestic consumption is still overwhelming. It would be difficult to convince members that investing in dairy plants and farms abroad is a judicious use of members' equity, unless it could be shown that such investment is necessary for the purpose of protecting and expanding the market for members' milk and milk products.

Equity financing alternatives

There is no doubt that equity capital is often the constraining factor in the ability of a cooperative to make new investment. Some cooperatives have tried alternative equity financing methods to leverage cooperative members' capital. Examples are forming a public stock corporation, issuing preferred stock, or forming a limited liability company, joint venture, or "new-generation" cooperative, etc.

Public stock corporation. There is one known case of a dairy cooperative offering common stock in one of its subsidiaries in the late 1980s. The cooperative converted its fluid business subsidiary into a publicly traded stock company, the idea being to use investor financing and stock as tools for expansion and growth, while members maintained the majority ownership of the business. However, in less than 3 years, the cooperative bought back all outstanding stock from minority owners.

It can be difficult for a cooperative to operate a public stock corporation subsidiary because there are fundamental conflicts between benefits for member-producers and investors' focus on returns on investment. In the dairy business, the conflict between producer milk pay price and profit for investors may be difficult to reconcile. Furthermore, with investor capital, the subsidiary and even the cooperative may lose Capper-Volstead status in inter-state commerce.

Preferred stock. A cooperative may issue preferred stock to raise more funds from members or to tap non-member capital. Preferred stocks that pay dividends and have preference in assets over common stock in the event of the dissolution of the cooperative are the most common type. Some preferred stocks may be considered as equity capital, while others may look more like debt capital, depending on how the rights of the shareholders are specified.

Limited liability company (LLC). An LLC is a State-approved, unincorporated association, just like a partnership except that it protects its owners and agents from personal liability for debts and other obligations of the LLC. Earnings pass through to the owners (no non-qualified retains) and enjoy single-tax treatment. An LLC may operate on a cooperative basis. Or it may allocate earnings and losses and assign votes among its owners any way they want to.

Some producers believe that an LLC provides greater flexibility for tapping investor capital. However, the combination of producers and investors in an LLC would encounter the same issues as in a publicly traded subsidiary operated by a cooperative.

Joint venture. An LLC may be a useful model for established cooperatives to form joint ventures with other cooperatives or firms. On the marketing side, a joint venture LLC may be used by a cooperative and its partner to develop and market certain dairy products. The cooperative supplies dairy inputs and the partner provides technical or marketing know-how to the LLC.

The joint-venture partners share the financing and the risk of the business activities of the LLC. This organizational model reduces the cooperative's capital requirement and risk exposure, while a market outlet for milk is secured.

Many recent joint ventures formed by cooperatives with other business entities are organized as LLCs.

"New-generation" cooperative. A new-generation cooperative usually requires significant equity investment as a prerequisite to membership and delivery rights, in order to ensure that an adequate level of capital is raised and the plant capacity is fully utilized. The delivery right is in the form of equity shares that can be sold to other eligible producers at prices agreed to by the buyer and seller, subject to the approval of the board of directors. The transferable delivery right is appealing to members because it allows them to cash in on any increase in the value of their cooperative when they retire.

Interest in new-generation cooperatives surged in the 1980s and 1990s, largely in response to the market condition prevailing during that time period. Cooperative development leaders believed that this form of cooperative organization would solve the problem of depressed farm income by engaging in value-added processing.

Many new-generation cooperatives have been successful. However, the attributes of the new-generation cooperative model also have created some problems, mainly related to delivery-right and property-right issues (*Torgerson*). After the turn of the 21st century, interest cooled down substantially.

There was only one dairy cooperative known to have been organized using the new-generation model. In 1995, Dakota Dairy Specialties was established to make specialty cheese. But its remote location, the capital investment needed to renovate its plant, and the skill required to make and market specialty cheese

posed major problems, and the new-generation model proved no help. It suffered the same fate as the struggling cooperative it was formed to replace. By 1999, Dakota Dairy Specialties ceased to operate.

Addressing Cooperative Equity Financing Issues

Dairy cooperatives may be characterized as epitomizing the economic theory of what cooperatives are and what cooperatives do (the classic *raison d'être* of cooperatives). Their experience as shown in this report can serve as an example for addressing equity financing issues that were raised in the introduction of this report.

1. ***Question.*** Because equity capital is furnished by members and therefore is rather limited, how does a cooperative gain access to capital without incurring long-term debt to fund the organization in this new, expanded and globalized marketplace?

   Answer. Members organize or join a cooperative to market their farm production. It is in their interest to provide capital for the cooperative's operation. But they need to be convinced that the cooperative's venture is necessary to solidify the market for their products, sell more of their products, or add value to their products. They must also agree that the benefit of the endeavor is the best alternative for investing the capital.

   Members of a newly formed cooperative may need some assistance in the initial stage of its formation. Over time, though, the cooperative must be self-sustaining.

   In both cases, the information about market reality and a well thought-out business plan that the cooperative intends to follow should be made clear to the membership. After weighing all available options, it is up to members to decide if they want a viable cooperative to market their products and support it with an adequate level of equity capital, or if they prefer other alternatives or business models.

2. ***Q.*** How does a cooperative provide a vehicle for members to gain access to the value of the business, which some of them perceive to be higher than its book value, without selling the cooperative or going public?

   A. If market value of the cooperative is higher than the book value, it means the cooperative's earnings and potential future earnings are higher than can be expected, given its level of equity capital. This usually reflects certain attributes the cooperative possesses, such as: unique and highly desirable products; profitable market niches; valuable intellectual properties (technology, manufacturing and marketing know-how, brand names, etc.); and superb governance, management and staff. Members gain access to the cooperative's value of higher earning ability by receiving higher pay prices, premiums, and patronage refunds. Selling the cooperative to gain the value of the business is tantamount to "killing the goose that lays the golden egg."

   The agitation for accessing the perceived market value of the cooperative most often comes from members who are near retirement or whose farming business is otherwise approaching the end of the line. However, some active members may also prefer the instant payout. Other members may want the cooperative to continue marketing farm production for the current generation and the generations to come. Basically, it is up to members to decide whether retaining the cooperative or selling it is in their best interests.

3. ***Q.*** Facing equity redemption issues or in need of more capital, are there alternatives short of selling the cooperative or going public?

   A. Members have substantial equity invested in the cooperative for marketing their products effectively and efficiently. Equity investment should be commensurate with the functions they want the cooperative to perform on their behalf. Constrained by insufficient equity capital or having difficulties raising more capital, the cooperative may have to retrench.

   Through the years, many dairy cooperatives exited from manufacturing and processing dairy products when their plants needed modernization and the required milk volume and

capital investment for the new plant "outsized" the cooperative. They transformed the cooperative to focus on bargaining operations to fulfill members' primary goal that their milk be assured a market and receive a fair pay price. Many other cooperatives merged to have a larger pool of milk volume and capital, which could be deployed more efficiently as a result of economies of scale.

Bargaining cooperatives usually require less capital to operate. In 2007, bargaining-only cooperative members had just $0.42 of equity per cwt of milk marketed through their cooperatives, while members of niche-marketing cooperatives had $4.78 per cwt and members of diversified and fluid processing cooperatives had $2.79 (*Liebrand*).

It is up to members to decide what they want the cooperative to do and how much they want to support it, or if they prefer other alternatives or business models.

4. ***Q.*** Are new-generation cooperatives the answer to cooperative financing issues?

   A. The primary difference between a new-generation cooperative and a traditional one is that members of a new-generation cooperative have to pay the required equity upfront to acquire delivery rights; a traditional cooperative accumulates equity over time through retained patronage. While this and other attributes have helped many new-generation cooperatives achieve successes, they also encountered their own set of issues, mainly relating to delivery rights and property rights.

   One further issue that has not been discussed is the venture-capital character of the investment in new-generation cooperatives. Many new-generation cooperatives are organized to take advantage of an investment opportunity that promises enticing returns by processing one product or a narrow range of products. The venture is capital intensive and requires a large start-up fund. The expected returns on investment may be high, but so may be the risk.

   An example is a cooperative organized by corn producers to invest in an ethanol plant that will use members' corn as feedstock. In this case, members' equity in the cooperative is very much like venture capital and members' corn is tied to a single use. Both of these attributes entail substantial risks, including risks that are related to unsettled ethanol technology, uncertain ethanol market outlook, volatile corn-ethanol-petroleum market dynamics, and shifting priorities of public policies (subsidies, tariffs, etc.). This mode of operation is very different from a grain cooperative that is organized to market members' corn through a variety of marketing channels, perhaps with supplying ethanol plant(s) as one of its enterprises.

   So, new-generation cooperatives have their pros and cons but probably are not a panacea for cooperative financing issues. Furthermore, consideration should be given to whether a cooperative (new-generation or otherwise) is most appropriate for organizing a particular new venture or if some other business model is more suitable.

5. ***Q.*** What effects might issuing preferred stock have on a cooperative's practice?

   A. Preferred stock may specify nearly any conceivable right for shareholders. What effects preferred stock may have on a cooperative's practice depend on what rights are specified. Preferred stock that pays dividends and has preference in assets over common stock in the event of the dissolution of the cooperative—the most common type of preferred stock—probably would not have any impact. If the preferred stock confers certain voting rights, the effect would depend on what specific issues the preferred stock holders are entitled to vote on.

6. ***Q.*** What long-term effects can (unallocated) retained earnings from non-member business have on cooperative governance?

   A. Cooperatives may have non-member business for various reasons. In any case, retained earnings sourced from non-member business

are owned by the cooperative and, therefore, jointly owned by members. Disposition of retained earnings is at the discretion of the board of directors. However, a cooperative would not be conforming to the Capper-Volstead Act requirement if its non-member business exceeds 50 percent of total sales.

In the case of dairy cooperatives, retained earnings represented 10.8 percent of member equities in 2007 (table 1). However, besides earnings that are sourced from non-member business, a substantial portion of these earnings may include: allocated equities that some cooperatives choose not to separately specify in the financial reports; retained net savings that are going to be allocated later; or earnings that are difficult to attribute to specific member transactions.

7. ***Q.*** What changes in governance, organizational structure, and practice may be brought about by the new cooperative laws enacted by some States that allow outside (non-member) equity capital?

   A. There is a large variation among the few State laws that allow cooperatives to have outside investors. They vary from reserving the voting power to member-patrons only, to setting a minimum level of voting power for member-patrons. Requirements regarding earning distribution between member-patrons and investors also differ substantially. Differences in governance and earning distribution rules and the type of investors involved (e.g., for-profit investors, non-profit economic development organizations, etc.) will have different influences on cooperative organizational structure and cooperative practice. It is probably better to analyze them on a case-by-case basis.

   Not every cooperative newly incorporated under these State laws has investors; some choose not to have investors and operate as a traditional cooperative.

8. ***Q.*** How plausible is the contention that there is a large amount of untapped equity in rural America that cooperatives do not have access to and that should be allowed to be invested in cooperatives?

   A. If the farm sector equity is any indication, it is not clear how much of it is untapped or available for off-farm investment. The equity-to-asset ratio of the farm sector is between 88 and 90 percent during the 5-year period 2006-2010 (table 4). This is in contrast to around 96 percent of the total assets that are in fixed and farming assets (about 84 to 85 percent of the assets are in land and real estate and 11 to 12 percent are in farming assets). Only around 4 percent of the assets ($74 billion to $85 billion) are in financial assets, and they may not be available for investing in new off-farm ventures unless the expected return from the new investment could out-perform the opportunity cost of on-farm working capital requirement or the opportunity return of existing financial investments. Borrowing against the assets to invest in new off-farm ventures may not be a promising proposition.

   Of course, the farm sector does not represent the entire rural economy, but comparable financial data for rural America is not readily available. Recent assessment of the state of rural economy shows that it faces significant challenges (*Council of Economic Advisers*). In any case, it is highly unlikely that there is a large amount of untapped equity to be found in rural areas.

Conclusions

Dairy cooperatives are prime examples of the traditional model of a cooperative that is owned, controlled, financed, and used by members. Focusing on the business of marketing members' milk, dairy cooperatives benefit members by enhancing returns to their milk production efforts; members supply equity capital needed for the cooperative to carry out its function as their collective milk marketing arm.

The cohesiveness between member purposes and cooperative functions makes dairy cooperatives, as a group, perhaps the most prominent agricultural marketing cooperatives. This is because milk is highly perishable and its daily production must have an assured, ready market. To most dairy farmers (84 percent of

Table 4—U.S. farm sector balance sheet selected items, 2006-2010[F]

	2006	2007	2008	2009[P]	2010[F]
			---------*$ billion*---------		
Farm assets	1,924	2,055	2,016	2,044	2,096
Real estate	1,626	1,751	1,703	1,727	1,777
Financial assets	74	79	82	84	85
Farming assets[1]	224	225	231	232	233
Farm debt	204	214	243	245	245
Farm equity	1,720	1,841	1,773	1,798	1,861
Selected ratios:			---------*Percent*---------		
Real estate/assets	84.5	85.2	84.4	84.5	84.8
Financial assets/assets	3.8	3.8	4.0	4.1	4.0
Farming assets[1]/assets	11.7	11.0	11.5	11.4	11.1
Equity/assets	89.4	89.6	88.0	88.0	88.8
Debt/equity	11.8	11.6	13.7	13.6	12.6
Debt/assets	10.6	10.4	12.0	12.0	11.2

F = forecast and P = preliminary. [1]Livestock and poultry, machinery and motor vehicles, crops stored, and purchased inputs.
Source: *Farm Income and Costs: Farm Sector Income Forecast*, Economic Research Service Brief Rooms, updated August 31, 2010.

U.S. total in 2007), marketing services provided by their cooperatives are indispensible for the dairy farming business. It is for this reason that equity capital financing, in general, is not a contentious issue for dairy cooperatives if the fund is for the core business of marketing members' milk. This case study shows that dairy cooperatives are seldom used as a vehicle for investing in ventures that are unrelated to member business.

The close bond between producers and their dairy cooperatives may or may not be replicated in other agricultural commodity sectors, depending on the characteristics of the commodity and its market. Because no two commodities are the same, the needs of respective producers in marketing them also vary. Cooperatives may be more essential to producers of commodities that have to be marketed shortly after being produced (such as vegetables, fruits and, of course, milk) or that have no ready market outlet other than the cooperative, than they are to producers of commodities that are storable and have a longer marketing season (such as grains and oil seeds) or that have multiple market outlets.

It stands to reason that raising or retaining equity capital is more challenging for a cooperative that is regarded by its members as but one of the competing market outlets for their products than for a cooperative that is indispensible to members.

It can be even more challenging for a farm supply cooperative that has to compete with other supply stores in the local market. There are hundreds, or even thousands, of supply items, and it is unlikely that the cooperative can be the best-value provider of every piece of merchandise. "Cherry-picking" by members in making purchases is inevitable. However, it is difficult to raise equity capital from members in this circumstance. (A food cooperative competing with other stores may encounter the same issue.)

Regional farm supply cooperatives may have economies of scale in product sourcing or in operating manufacturing facilities, especially for major supply items such as seeds, feed, fertilizer, chemicals, and petroleum products. They could pass along cost-savings derived from scale economies to members and thus better meet competition. However, operating upstream manufacturing plants has its own risks (such as volatile raw material prices) that require the cooperative to have ample capital to cushion the shocks. The challenge for these cooperatives is to have a solid and broad membership base that sees the value of supporting the cooperatives with adequate equity capital.

All these point to the fact that the cooperative capital financing issue is really a reflection of a certain gap or disconnect between member purposes and cooperative functions. It is less of an issue the narrower the gap and a more serious issue the wider the gap. The solution to the issue then lies in assessing what members want the cooperative to do and whether they are willing to finance it with equity capital in the amount commensurate with the benefits they expect to receive—and the cooperative should operate accord-

ingly for members' best interests. In some cases, they may decide whether the cooperative is the most suitable business model for what they want to accomplish.

In recent years, the cooperative model has gained new attention from social entrepreneurs and economic development practitioners. Being owned, controlled, and used by members for mutual benefits, cooperatives are an appealing tool to empower people to work toward their own economic destiny. They can be adapted to be community-based organizations to serve economic opportunity-deprived or service-deprived areas. Because such cooperative organizations are formed to address public policy or social issues, it is appropriate to have initial capital funding assistance from public or philanthropic sources. Over the long term, however, they must be self-sustainable in order to be economically viable. Some exemplary precedents are rural electric cooperatives (*National Rural Electric Cooperative Association*) and the Farm Credit System (*Farm Credit Administration*).

References

American Heritage Dictionary of the English Language, New College Edition, Houghton Mifflin Company, Boston, 1976.

Council of Economic Advisers, Executive Office of the President. *Strengthening the Rural Economy*, April 2010.

DeVille, Katherine C., Jacqueline E. Penn, and E. Eldon Eversull. *Cooperative Statistics, 2008*, U.S. Department of Agriculture, Rural Development, Service Report 69, November 2009.

Emelianoff, Ivan V. *Economic Theory of Cooperation: Economic Structure of Cooperative Organizations*, Washington, D.C. 1942 (litho-printed by Edwards Brothers., Inc., Ann Arbor, Michigan), 269 pages. (A reprint by the Center for Cooperatives, University of California, 1995, may be accessed at: http://cooperatives.ucdavis.edu/reports/index.htm.)

Farm Credit Administration. *History of the FCA and the FCS*, *http://www.fca.gov/about/history/historyFCA_FCS.html*.

Field, Richard. "Can the U.S. Be a World Market Player?" *Hoard's Dairyman*, March 10, 2009, p. 173.

Galbraith, John Kenneth. *American Capitalism: The Concept of Countervailing Power*, revised edition, Houghton Mifflin Company, Boston, 1956; esp. Chapter XI, The Case of Agriculture, pp. 154-165.

Harris, J. Michael, James Johnson, John Dillard, Robert Williams, and Robert Dubman. *The Debt Finance Landscape for U.S. Farming and Farm Businesses*, AIS-87, USDA, Economic Research Service, November 2009.

Hess, Jerry N. *Oral History Interview with Dr. Edwin G. Nourse*, Washington, D. C., March 7, 1972, Harry S. Truman Library, Independence, Missouri. http://www.trumanlibrary.org/oralhist/nourseeg.htm.

Innovation Center for U.S. Dairy. *The Impact of Globalization on the U.S. Dairy Industry: Threats, Opportunities, and Implications*, Arlington, VA., October 2009.

Larsen, Grace H. and Henry E. Erdman. "Aaron Sapiro: Genius of Farm Co-operative Promotion," *The Mississippi Valley Historical Review*, Vol. 49, No. 2, 1962, pp. 242-268.

Liebrand, Carolyn B. *Financial Profile of Dairy Cooperatives, 2007*, USDA Rural Development, Research Report 219, April 2010, table 4.

Ling, K. Charles. *Marketing Operations of Dairy Cooperatives, 2007*, USDA Rural Development, Research Report 218, July 2009.

Ling, K. Charles. "High prices for dry dairy products due to diverse reasons," in *Whey to Ethanol: Biofuel Role for Dairy Cooperatives?* USDA Rural Development, Research Report 214, February 2008, p. 4.

National Rural Electric Cooperative Association. *History of Electric Co-ops*, http://www.nreca.org/AboutUs/Co-op101/CoopHistory.htm.

Nourse, Edwin G. "The Economic Philosophy of Co-Operation," *American Economic Review*, Volume XII, No. 4, December 1922, pp. 577-597.

Nourse, Edwin G. "The Place of the Cooperative in Our National Economy," *American Cooperation 1942 to 1945*, American Institute of Cooperation, 1945, pp. 33-39.

Sapiro, Aaron. "True Farmer Cooperation," *Journal of Agricultural Cooperation*, Volume 8, 1993, pp.81-93, reprinted from the *World's Work*, May 1923, pp. 84-96.

Shaffer, James D. "Thinking about Farmers' Cooperatives, Contracts, and Economic Coordination," *Cooperative Theory: New Approaches*, ACS Service Report Number 18, U.S. Department of Agriculture, Agricultural Cooperative Service. July 1987, pp. 61-86.

Torgerson, Randall E. "A Critical Look at New-Generation Cooperatives," *Rural Cooperatives*, United States Department of Agriculture, January/February 2001, pp.15-19.

U.S. Department of Agriculture. Economic Research Service Brief Rooms, Dairy: Trade, http://www.ers.usda.gov/briefing/Dairy/Trade.htm.

U.S. Department of Agriculture. Rural Development, Business and Cooperative Programs Public Meeting on Research Transcript: September 27, 2005: http://www.rurdev.usda.gov/rbs/pub/ResearchPublicMeetingTranscript.pdf.

U.S. Department of Agriculture
Rural Business–Cooperative Service
Stop 3250
Washington, D.C. 20250-3250

Rural Business–Cooperative Service (RBS) provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The cooperative segment of RBS (1) helps farmers and other rural residents develop cooperatives to obtain supplies and services at lower cost and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs. RBS also publishes research and educational materials and issues *Rural Cooperatives* magazine.