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Minnesota Farm Business Notes
Division of Agricultural Economics

Equity Capital Financing of Cooperatives

Thomas E. Snider and E. Fred Koller

More than 1,500 farmers' marketing, purchasing, and service cooperatives operate in Minnesota. Members of each cooperative must provide at least part of the organization's equity capital. Farmers in Minnesota now have an estimated $280 million of owner equity in their cooperatives.

Since 1950, the number of cooperatives in Minnesota has decreased, but the volume of business handled by them has increased significantly. The gross volume of business handled by the state's marketing, supply, and related service associations was $1,402 million in the 1964 crop year as compared with $791 million in 1951.[1] This increased business volume, along with new capital-using technologies in processing and distribution of agricultural products, has greatly increased capital requirements of these organizations.

The University's Department of Agricultural Economics recently studied the capital requirements of local dairy manufacturing cooperatives in Minnesota. For this study, we selected a representative sample of 71 associations out of Minnesota's 292 dairy manufacturing cooperatives. The manager of each firm was interviewed; financial data for 1950, 1955, and 1961 through 1965 were obtained.

We were primarily interested in studying the capital structure of these cooperatives to determine the nature and extent of their equity capital financing. We also wanted to determine if these firms were using the least-cost capital structure. By capital structure, we mean total equity capital (common and preferred stock, patron's equity reserves, etc.) plus long-term debt.

Equity capital is important in the financing of a cooperative, as it is in any business firm, because it is the risk capital. Equity capital is necessary when a business firm wants to borrow funds, because creditors view it as a buffer protecting them from loss. Cooperatives, like other businesses, may obtain equity capital by selling stock or by retaining earnings in the business.

Most Minnesota cooperatives are organized on a stock basis. To become voting members, patrons usually are required to purchase at least one share of common stock. Since the par value of common stock generally is rather low, the financial burden of becoming a member is relatively light. During the period studied, the par value of common stock issued by the 71 cooperatives decreased. In 1950, the most frequently used par value was $10; in 1965, it was $1. In 1965, common stock constituted only 1.4 percent of the capital in the 71 associations (see table).

Some cooperatives sell preferred stock to raise capital. Preferred stock can be sold to nonmembers as well as members. Since it is nonvoting stock, cooperative patrons do not lose control of their organization by selling this stock. Preferred stock comprised 11.9 percent of the total capital of the 71 firms in 1965.

One basic principle of cooperatives is operation at cost. Most cooperatives achieve this objective by paying the going price for products and returning net margins to the members on a basis proportional to their patronage. These patronage refunds, as such payments are called, may be made in cash. Or they may be allocated to each member but retained in the business. When funds are retained, the member is issued a stock credit, book credit, or other evidence of his allocated share. By far, the largest source of equity capital in cooperatives is retained earnings.

In the 71 cooperatives studied, the most common method of handling retained earnings was to allocate them and add them to the patron's equity reserve account. Under this system, the member is notified in writing of his share of retained earnings. Individual

(Continued on page 2)

[1] These figures do not include the business volume of REA, credit cooperatives, and some other associations.

Food Aid and U.S. Agriculture

James P. Houck

In 1776, Thomas Paine, the great political writer, said:

> **Not a place on earth might be so happy as America. Her situation is remote from all the wrangling world, and she has nothing to do but to trade with them.**

Things have changed in 190 years. The United States has been thrust into center stage among the world's wrangling nations. We have assumed leadership in almost every international field. This article discusses one of these fields, the shipment of food and fiber outside commercial channels to poorer nations all over the globe. Beginning as early as World War I, U.S. agricultural abundance has been supplied to food-short nations under special programs. Since 1954, Public Law 480 has provided the authority for most shipments.

Our food aid program has not grown in total value since about 1956. About $1.9 billion worth of products was shipped in 1956; in 1965, the total was $1.6 billion. With expanding commercial trade, the food aid sector is relatively less important now than in the mid-1950's. Food aid shipments now comprise about 25 percent of all exports compared with 40 percent in 1956.

Immediately after World War II, our food aid programs helped beat back famine in the war-ravaged nations of Europe and Asia. As these nations rebuilt their economies, our emergency shipments naturally diminished. At about the same time, sizable commodity surpluses began to accumulate in this country under our price support and storage programs. The passage of Public Law 480 in 1954 was partly a response to this surplus pressure and partly a response to emerging needs in food-short friendly nations. In the early 1960's, surplus stocks of wheat, feed grains, and other products began to decrease due to increased exports on one hand and voluntary acreage reduction programs on the other.

A new version of Public Law 480 was passed by Congress in 1966. It shifts the emphasis away from surplus disposal toward a program more consistent with the needs of less developed nations and our overall foreign policy. For example, commodities shipped no longer must be designated "in surplus" by the Secretary of Agriculture. Any agricultural commodity, in raw or processed form, is eligible for the up-dated program.

As we consider food aid needs in

(Continued on page 3)

Equity Capital Financing . . .

(Continued from page 1)

farmers in Minnesota have retained earning credits in their dairy cooperatives ranging from a few dollars to over $10,000.

In addition, Minnesota cooperatives are required by law to set aside 10 percent of their annual net margins in a general reserve account until it equals 50 percent of the paid-in capital.

In 1965, members of the 71 sample dairy firms had $34,679,000 in the patron's equity reserve and general reserve accounts of their cooperatives. These two items accounted for 77.3 percent of the total capital. Total equity capital accounted for 90.6 percent of the capital structure of the 71 cooperatives (see the table).

Minnesota dairy cooperatives also use some debt captial. In 1965, the sample cooperatives had $4,191,000 of long-term debt. Significantly, long-term debt, as a proportion of total capital, declined between 1950 and 1965 (see the table). In 1965, 52 percent of the 71 firms did not have any long-term debt; 23 percent did not use term debt during the 1961-65 period.

Many Minnesota cooperatives handle their retained earnings on a revolving capital basis. Under this plan the cooperative obtains capital by retaining earnings or making a small deduction for each unit of product marketed through it. When the cooperative has obtained all the capital it needs, current year earnings are used to retire the oldest outstanding capital.

The figure illustrates how a revolving plan operates. In the 1st year of the plan (1961), $50,000 of earnings were retained by the cooperative and added to the revolving fund. In 1962 and 1963, earnings of $42,000 and $58,000, respectively, were added to the revolving fund for a total of $150,000. At this point, the cooperative had retained all the capital it needed. Therefore, the 1964 earnings of $52,000 were retained and used to retire the oldest equities of $50,000 issued in 1961. Each year thereafter, the oldest retained earnings were retired in a continuing pattern.

In most Minnesota cooperatives, the length of the revolving period is discretionary with the board of directors. The board decides when and how much old captial to retire each year. The length of the revolving period depends largely upon the organization's capital needs and the amount of annual earnings available for retention.

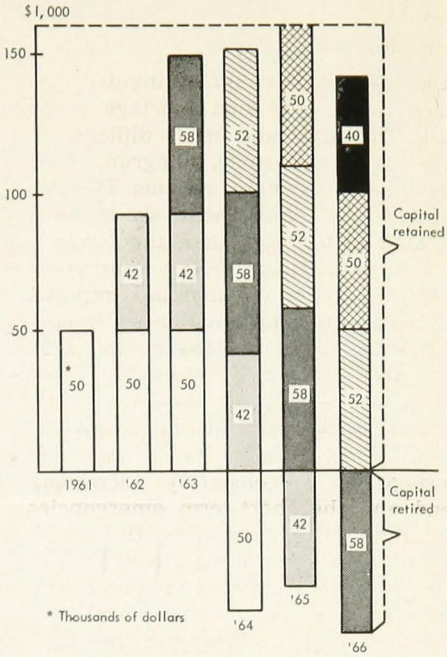
All of the 71 sample dairy cooperatives reported use of the revolving capital plan. Only 40 revolved capital in 1965; the average length of the revolving period for these cooperatives was 10.7 years. The shortest revolving period was 4 years, the longest was 17.

Only 38 percent of the cooperatives revolved capital every year from 1961 to 1965. Between 1950 and 1965, the average length of the revolving period increased from 7.0 to 10.7 years.

A long and irregular revolving period may cause members to lose confidence in their cooperative and, therefore, to market their products elsewhere. This practice could retard the cooperative's growth. Thus, cooperatives should make every effort to revolve their capital within a reasonable period. Some cooperatives can accomplish this task by good financial planning. Others may have to obtain more capital from the sale of common or preferred stock. In some cases, more debt capital should be used to expedite revolving.

Cooperative management should recognize that members have substantial competing capital requirements. Therefore, they may not be interested in providing the cooperative with more equity than is necessary to give it a good credit rating.

Retained earnings are not a free source of capital. Earnings returned to the member may be invested on the farm or elsewhere to bring some rate of return. Therefore, the cost of retained earnings is the rate of return the member could earn on the capital if it was returned to him.



Revolving capital plan of a farmer cooperative

Since most farmers have short-term debt, a reasonable estimate of the minimum rate of return a farmer can earn on his capital is the rate of interest paid on this debt. We estimated the average cost of short-term credit for Minnesota farmers to be 6.9 percent. So cooperatives should not use retained earnings in investments yielding less than 6.9 percent. If capital with a lower cost is available from other sources, these sources should be used.

We found in this study that most Minnesota dairy cooperatives could reduce their cost of capital by using more debt capital. This finding is based on the assumptions that (1) retained earnings are not free and (2) the farmer member has an opportunity cost of about 6.9 percent for the capital retained by the cooperative.

Furthermore, a large proportion of the dairy firms had much more debt capacity than they were using. In many cases, using more debt capital and then revolving retained equity more rapidly would result in savings to members. This procedure generally could be followed without endangering the cooperative's financial position.

Most Minnesota dairy cooperatives are in a satisfactory financial condition in terms of their equity to debt ratio and other financial indicators. However, many cooperatives should take their revolving fund responsibilities more seriously. Careful financial planning may enable some cooperatives to improve their revolving program or develop other suitable financing methods. ■

Capital structure of 71 Minnesota dairy manufacturing cooperatives, 1950 and 1965

Types of capital	1950		1965	
	Thousand dollars	Percent	Thousand dollars	Percent
Common stock	734	5.4	635	1.4
Preferred stock	3,457	25.6	5,353	11.9
Patron's equity reserve	6,508	48.2	32,428	72.3
General reserve	1,212	9.0	2,251	5.0
Total equity	11,911	88.2	40,667	90.6
Term debt	1,600	11.8	4,191	9.4
Total capital	13,511	100.0	44,858	100.0

Food Aid . . .

(Continued from page 1)

other nations, let us distinguish between two major food shortage problems. The first, and most difficult to solve, is the chronic, longrun, food deficit faced by many nations. Population and food requirements are increasing at a faster pace than the longrun trend of available supplies from local production and commercial imports. The second is shortrun famine emergency when already meager food supplies are reduced by drought, flood, insect infestation, or revolution, and no local stocks exist to fill the gap.

One might visualize the chronic food shortage as a constantly increasing trend and the short-term emergencies as fluctuations aggrevating the trend. This distinction is useful, even though both problems are woven closely together in most poorer nations. For instance, a crop failure can be very severe in a land suffering chronic food shortage, because no stocks exist to cover the needs either from year to year or from one part of the country to another. In addition, foreign exchange needed to buy food in commercial markets probably is scarce.

This situation has existed in India for the past year or two. A severe drought has been superimposed upon a chronic food shortage. Although human suffering in some localities may be intense, widespread starvation probably will be avoided due to increased aid from the United States and other countries.

After the rains come again, however, the long-term erosion of dietary levels will continue unless the first and basic food deficit problem is alleviated. This longrun problem is difficult to solve. Basic changes in cultural and economic structures are involved. Fundamental attitudes and traditions must be abandoned. The problems in no two nations are exactly alike.

Recognizing these limitations, let us consider the less developed nations as a single group. Figure 1 shows the recent trends in agricultural production for both developed and less developed nations. Total agricultural output has trended upward strongly in both regions; the less developed nations have increased total output tremendously since 1954.

But per capita production is where the real battle is waged, and the poorer nations are not winning. Population growth is overriding production increases. Notice also the recent slowdown in the growth of total output in less developed nations. If this trend continues, it is ominous.

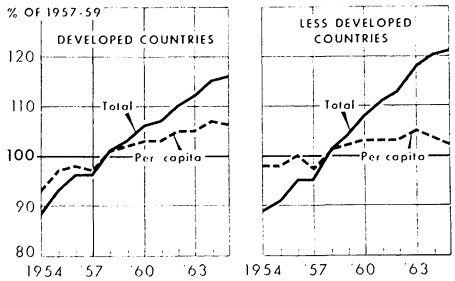


Figure 1. World agricultural production in developed and less developed countries.

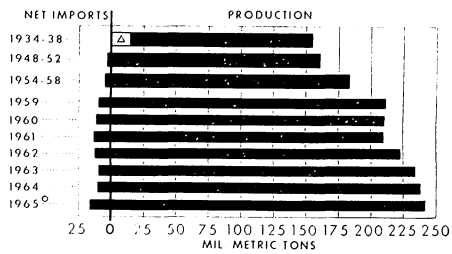


Figure 2. Production and net trade in grain in less developed countries (△ = net exports).

Figure 2 illustrates the change by less developed nations from net grain **exporters** in 1934-38 to net grain **importers** in recent years. Note the relative size of imports compared to production in 1965. Imported grain was a small but crucial fraction of total supplies, amounting to about 7 percent. Much of these imports were concessional sales and donations from the United States.

The U.S. Department of Agriculture recently made some interesting projections of food requirements and supplies. They projected **food aid** needs for the less developed nations by taking future food requirements (with some dietary improvement) and subtracting projected domestic production and commercial imports—all in terms of grain. This projection increases at an increasing rate throughout this century.

Then USDA projected available U.S. **food aid supplies** by taking our total production on existing cropland and adding the output available by phasing currently idle cropland into production. From this amount, they subtracted domestic needs and commercial exports. At "full throttle," we could keep ahead of food aid requirements for a while. But somewhere between 1980 and the end of the century, the lines cross. Then food aid needs outstrip our ability to supply them—**unless present trends change.** This phrase "unless present trends change," is the key to our current policy on food aid and technical assistance programs. The attempt to change present trends is why we now:

- **Tie future food aid to programs of self-help by recipient countries.**
- **Operate a "farmer-to-farmer program" designed to spread advanced production know-how.**
- **Emphasize agricultural projects in the Peace Corps and AID missions.**
- **Help establish fertilizer and machinery plants.**
- **Stand ready to assist governments in population control programs.**
- **Assist governments with appropriate price support and incentive programs for farmers.**
- **Help modernize out-dated local marketing systems.**

If these efforts are not successful, hard times lie ahead. The day of reckoning will not come in a sudden castastrophic famine. It will come one calorie and one vitamin at a time as diets of adults and children in poor nations continually erode under population pressure and stagnating agriculture. And the result? As a Roman philosopher put it almost 2,000 years ago, "A hungry people listen not to reason, nor care for justice, nor are bent by any prayers."

But the problems of "changing present trends" and shipping food under special terms are extremely complex. Sovereign nations, even poor ones, do not always welcome foreigners "meddling" in domestic affairs, altering centuries-old cultural and commercial patterns, and tying strings to offers of help.

It is even difficult to give food away. Farmers in recipient nations may feel, rightly perhaps, that food aid shipments keep domestic prices and production too low. Marketing, storing, and handling facilities in recipient nations may be hopelessly inadequate for a large influx of agricultural commodities.

Other exporting nations feel that, at best, we are disrupting normal trade and, at worst, stealing their markets. The recent multination food aid agreement, reached in Geneva, may help alleviate this particular problem.

What does this situation mean to farmers and farm leaders in Minnesota and elsewhere? It means that the needs are great and growing, that U.S. agriculture cannot hope to "feed the world" or any sizable portion of it over the long run, and that food aid can play a vital and growing role but probably will not be the bonanza for U.S. farmers expected by some observers.

Food aid alone will not be the key to a better life for our less fortunate neighbors. The key lies in difficult and frustrating cooperation with other nations as they learn to wrench increasing amounts of food and fiber from their own resources. ■

In Perspective

Nonfat Dry Milk in Foreign Feeding Programs

M. K. Christiansen

Since August of last year, USDA has been buying a blended food product known as CSM (cornmeal, soy flour, and nonfat dry milk). It can be used instead of nonfat dry milk in foreign feeding programs. These purchases totalled 194 million pounds for delivery through April 1967. Another 35.6 million pounds were contracted for during May. These developments draw attention to the future role of nonfat dry milk in stepped-up aid programs to less developed nations.

Most purchases of CSM have been for a mixture of 69-percent cornmeal, 26-percent soya flour, and 5-percent nonfat dry milk, with vitamins and minerals added. Protein content of the mixture is 19 percent. This product, used for foreign donations to school lunch and child-feeding programs, is substituted pound for pound for nonfat dry milk.

Beverages prepared from this product, as well as other soy formulas, do not taste like reconstituted nonfat dry milk. But flavoring agents make them more acceptable to the recipient.

USDA began purchasing protein foods other than nonfat dry milk for Food For Peace programs in 1965. But the present stepped-up buying of CSM was brought on largely by the decline in government supplies of nonfat dry milk acquired through the dairy price support program. During the 1966-67 marketing year, USDA purchases of nonfat dry milk are estimated to have been about 420 million pounds. This amount—about one-third of the level of purchases during the 1961-63 period—was the lowest since the 1952-53 marketing year.

Since voluntary distribution agencies, as well as the government, want to maintain levels of aid in line with the needs of recipients, the decreased availability of nonfat dry milk has led to the use of alternative products. As we increase our food assistance, stability of adequate supplies will become increasingly important.

The decline in U.S. production of nonfat dry milk and an increase in foreign commercial demand have helped raise prices in both domestic and foreign markets. In recent months, domestic sales of nonfat dry milk have been supported at 19.6 cents per pound, compared to 14.4-14.6 cents during the 1962-65 period. The strengthening of the price of nonfat dry milk and the tightening supply situation have given added impetus to the use and development of blended food products.

CSM possesses a substantial price advantage over nonfat dry milk. However, price comparisons do not tell the whole story. Nonfat dry milk has many distinctive and desirable characteristics; it is useful and highly accepted both as a beverage and as an ingredient in the manufacture of many other foods. Whether or not CSM is an acceptable substitute for nonfat dry milk in all uses is not clear. But to a world short of protein, cost is important.

Recent USDA purchases of CSM were made at slightly below 9 cents per pound delivered at port facilities. On a protein basis, 1 pound of nonfat dry milk equals about 1.75 pounds of blended product. To compete on a price basis with a balanced nutrient source containing all necessary amino acids, nonfat dry milk would have to sell at about 16 cents per pound.[1] Present cost-price relationships in the farm production of milk suggest that the possibilities of directly meeting the challenge of blended food products purely on the basis of price are unlikely.

On the other hand, as an ingredient in various blended food products, the long-term use of nonfat dry milk might be expanded. The amount of expansion will be determined by many factors. Among these is the extent to which we expand our food aid programs. The expansion, in turn, depends upon our success in solving the many complicated problems of distribution and gaining acceptance by hungry but largely uneducated people. The price at which nonfat dry milk is made available for foreign program use, as well as the supplies available, will be important.

Not to be ignored are the activities of various commodity groups, welfare agencies, and commercial firms. They will continue to be important in both the development and marketing of high protein foods. Various commodity groups, particularly those concerned with crops such as soybeans and cottonseed, have become increasingly interested in this area.

The many welfare agencies such as UNICEF (United Nations Children's Fund) must be concerned with costs. They have to generate the greatest benefits possible from their resources.

Many commercial firms develop and market products for sale to poor and hungry people. Their task is to offer needed products at prices consistent with the purchasing power of buyers yet high enough to cover costs. The future role of nonfat dry milk will be affected by all these factors. ■

[1] Robert A. Miller. Nov. 1966. "Nonfat Dry Milk Versus Blended Food Products." *Dairy Situation*. ERS. USDA.

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