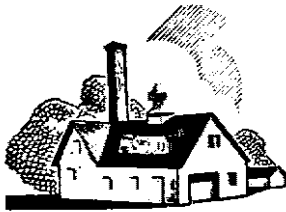


COOPERATIVE
ORGANIZATION
OF
IOWA FARMERS'
creameries
By
FRANK ROBOTKA
and GORDON C. LAUGHLIN.

Cooperative Organization of
Iowa Farmers'
Creameries



By FRANK ROBOTKA *and* GORDON C. LAUGHLIN

Iowa Agricultural Experiment Station
in cooperation with
Cooperative Division
FARM CREDIT ADMINISTRATION
WASHINGTON, D. C.

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Copies of this publication may be obtained upon request from the

Director of Information
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Washington, D. C.

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Iowa Farmers'
Creameries

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In cooperation with

Cooperative Division

FARM CREDIT ADMINISTRATION

BULLETIN NO. 14

APRIL 1937

**UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1937**

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Cooperative Organization of

Iowa Farmers' Creameries

INTRODUCTION

FARMERS' cooperative associations operated about half of the creameries in Iowa in 1923. These cooperative creameries manufactured in that year only 38 percent of the State's output of 133 million pounds of creamery butter. They have since gained in relative importance and now occupy a dominant position in the industry. Six out of ten of those in operation in 1935 were farmers' creameries, and they produced in that year 56 percent of the total output of Iowa creamery butter. Any saving or improvement brought about by these cooperative creameries, therefore, directly or indirectly affects most of the dairy producers of Iowa. In 1935, Iowa farms produced nearly 9 billion pounds of milk, valued at more than 100 million dollars. Production of creamery butter for the State in 1935 amounted to 219 million pounds, valued at more than 62 million dollars.¹

Since conditions in Iowa have changed greatly during the last decade or two, it was believed that a study of cooperative creameries in the State would be timely. Production of creamery butter has more than doubled since 1920. The mileage of paved roads has increased from 3 percent of all roads in 1924 to 20 percent in 1934, and the mileage of graveled roads has more than doubled during the

¹ Iowa Department of Agriculture, Dairy and Food Division. FORTY-NINTH ANNUAL REPORT. Bull. 66, 67 pp., illus. 1935. See pp. 18-20.

It is desired to acknowledge the advice and assistance of T. G. Stitts, Principal Agricultural Economist, Cooperative Division, Farm Credit Administration, in the conduct of this study. Credit is also due Joseph Shaw and Joseph H. Cowden of Iowa State College, who assisted in the field work.

The writers desire to express appreciation for the splendid cooperation of creamery operators and officials which has made this study possible, and for the critical review of the manuscript by officials and economists of Iowa State College; by Dr. E. W. Gaumnitz, of the Agricultural Adjustment Administration; and by Dr. E. G. Nourse, Director of the Institute of Economics, Washington, D. C.

For purposes of identification with the Iowa Agricultural Experiment Station records, this bulletin may be referred to as Journal Paper No. J. 433, Iowa Agricultural Experiment Station Project No. 454.

same period. Recent economic disturbances have had a profound adverse effect upon farmers' incomes. Three cooperative laws have been enacted since organization of a large proportion of the cooperative creameries. These and other changes have affected the cooperative creameries in various ways. It was felt that a critical appraisal should reveal methods and policies that have stood the test of time and indicate to some extent what changes may be needed in order to bring about the most satisfactory adjustment to recent trends and developments.

The primary purpose of the survey upon which this bulletin is based was to obtain a cross-section view of the general situation regarding farmers' creameries in Iowa. This bulletin, however, deals more particularly with their corporate and cooperative features and methods of operation, with special reference to the character of the relationships existing between the organizations and their members and patrons, and their effectiveness in carrying out the purpose of these organizations.

Since Iowa cooperative creameries have back of them a half century of experience, an appraisal of this experience should yield information of value not only to cooperative creameries here and elsewhere, but to cooperative organizations operating in other commodity fields. Accordingly, a study of these creameries was made in 1935 by the Cooperative Division of the Farm Credit Administration in cooperation with the Agricultural Economics Section of the Iowa Agricultural Experiment Station. The Cooperative Division is making a similar study of the cooperative creameries in Nebraska, where conditions differ considerably from those in Iowa.²

The main source of information for this study consisted of detailed reports obtained from cooperative creameries by means of personal interviews. Altogether 138 out of 277 farmers' creameries operating in 1935 were visited. All but six of the counties in which farmers' creameries operated were represented in the survey. Figure 1 shows the location of all the creameries operating in Iowa in 1934. The State is divided into three sections, based upon density of butterfat production. The cooperative creameries reached in each of the three sections of the State represented the following percentages of the total number in the area: 76 percent in central and northwestern Iowa; 67 percent in southern and southwestern Iowa; and 34 percent in northeastern Iowa. Because of the greater homogeneity of the creameries in northeastern Iowa, it is believed that the smaller number of creameries surveyed in that area probably provides as adequate a sample as those surveyed in the other areas. No arbitrary basis of selection was used. All conveniently accessible creameries located on routes planned a week ahead were visited.

²Stitts, T. G., and Lenzlin, Gordon C. ORGANIZATION AND OPERATING PROBLEMS OF NEBRASKA COOPERATIVE CREAMERIES F. C. A. Coop. Div. Bull. 11.

LOCATION OF INDEPENDENT, CENTRALIZER, AND FARMERS' CREAMERIES IN IOWA, 1934

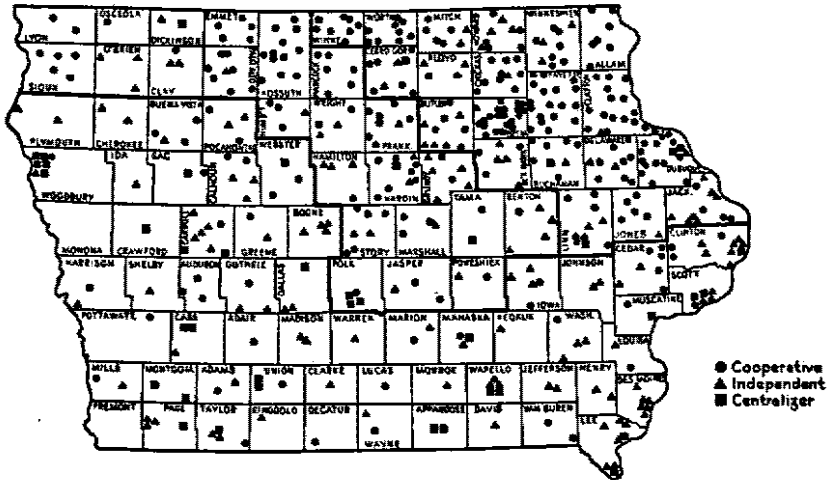


FIGURE 1.

For the purpose of the survey the State was divided into three sections according to density of butterfat production.

Most of the analyses are based on information obtained from 112 creameries, the schedules for which were regarded as sufficiently complete and accurate for such use. General information regarding the number of farmers' creameries, their corporate features, and related matters was obtained from records in the office of the Secretary of State and of the State Dairy and Food Division of the Iowa Department of Agriculture. Published reports of the latter office were also drawn upon for statistical information. Financial reports of creameries cooperating with the Extension Service of Iowa State College in connection with problems in accounting and business practice also yielded useful information.

POINT OF VIEW AND SCOPE OF STUDY

IF FARMERS are to receive maximum benefits from cooperation, they must have a clear understanding of: First, the peculiar opportunities for and the need of cooperation in agriculture; and, second, the essential characteristics that give the cooperative business organization its peculiar capacity to yield benefits and that differentiate it from the ordinary commercial organization. The extent to which cooperation will yield benefits in actual practice, therefore, depends upon: (1) A clear perception on the part of its membership and management of specific and definite opportunities for making savings, improving the service, and otherwise increasing farm incomes; (2) the extent to which producers are conscious of, and are willing to assume the obligations and responsibilities that devolve

upon the membership of a cooperative; and (3) the extent to which the plan of organization and methods of operation are consistent with the purpose of the organization and with cooperative principles. This study of Iowa cooperative creameries is undertaken from the point of view of the foregoing basic considerations.

Since much confusion seems to exist as to what a cooperative organization is, what its economic implications are, and the relationship of cooperation to economic reforms in general, a brief discussion of these questions is pertinent.

THE ECONOMIC PURPOSE OF COOPERATION

Business activity may be organized by owners of capital for their benefit, by laborers for their benefit, by agricultural producers or by consumers for their benefit as patrons of the organization. Cooperation is often erroneously regarded as an alternative to capitalism, yet it is in reality a method of functioning under capitalism. Farming as a business is itself organized and operated on a profit basis. Although perhaps the most common reason why farmers have organized cooperatives has been to protect themselves against exploitation, a more important reason is to enable them to perform their economic functions more effectively. They have sought through cooperation to gain the benefits of large-scale operations, improve their product and its market distribution, take advantage of wholesale purchasing, place themselves in a more strategic position with reference to their market contacts, and to do a multitude of other things designed to promote their private business interests.

The economic purpose of farmers' cooperatives does not differ in this respect from that of newspapers that maintain a cooperative news service, railroads that maintain cooperative transit and passenger bureaus, independent grocers and druggists who maintain cooperative wholesale purchasing associations, or scores of other commercial activities of a similar nature.

Large industrial and commercial organizations have "integrated" many purchasing and selling functions directly with the individual business enterprise, but small-scale businesses must usually combine, or delegate specific functions, in order to gain similar efficiencies and economies. The cooperative form of business organization provides a means whereby those who participate on a mutual basis are enabled to avail themselves of desired services at cost.

NEED FOR COOPERATIVE CREAMERIES IN IOWA

The growing relative importance of cooperative creameries in the Iowa dairy industry is not a mere accident. Perhaps the chief reason why farmers organized them was to protect themselves against

abuses existing in the local markets. In some cases these resulted because of lack of competition among dealers; in other cases, from excessive competition; and in some communities no satisfactory outlets were conveniently accessible. In any case, producers as a rule did not know the actual market value of butterfat and were unable to check weights and tests of their cream. Moreover, since dealers were more interested in margins and profits than in prices to producers, and since the one-price system of paying for butterfat simplified dealing with producers, farmers producing high-grade cream received no premium, and incentives to improve quality were lacking. Some of the older creameries no doubt were organized in response to the stress laid by the Grange upon the desirability of farmers organizing in an attempt to escape the economic pressure of the eighties and nineties.

Hence, these cooperative creameries, as did many other agricultural cooperatives, emerged not only as a protest against prevailing abuses, but in response to the hope of farmers that as they established themselves in business they might extend their economic influence and gain some measure of relief from a generally unsatisfactory situation.

Whatever induced farmers to organize cooperative creameries, these organizations soon discovered new opportunities to increase farmers' market returns from butterfat. Improvement of quality soon became one of their important activities. The fact that improvement in quality was reflected directly in prices paid producers, created an effective inducement for farmers to improve quality. Improvements in technical processes of manufacture likewise accrued directly to the benefit of producers. Moreover, manufacturing costs were reduced as a result of the fact that cooperative creameries concentrated larger volumes of business, on the average, than independent creameries.

Competition among private operators has been slow, and on the whole ineffectual, in bringing about the most economical scale of operations among Iowa creameries. Three important reasons are: (1) Producers feel that they cannot safely give a private operator a monopoly on the business; (2) competitive methods often tend to confuse producers as to the real merits of a given market outlet, hence, they do not concentrate their patronage upon the most efficient plants, and (3) since an independent operator has no assurance of patronage other than through competitive methods, he may be unable to adapt plant capacity to the most economical volume. Producers in a given trade area, however, through cooperation may consolidate the available volume in one cooperative plant and thus adapt plant capacity to such a scale of operation.

More recently, steps have been taken to improve the marketing of the finished product through the establishment of sales agencies. An important aspect of the effort in this direction is the emphasis placed



FIGURE 2.—PANEL ADVERTISING ON THE CREAM-ROUTE TRUCKS OF THE GREENE COOPERATIVE CREAMERY.

A number of Iowa creameries which produce high-quality butter market their products under a common trade name.

on increasing the market value of the product through standardization as well as quality improvement. Standardization of the quality of the product makes possible the effective use of trade names in publicizing that product (fig. 2).

The activities just discussed represent a distinct shift from the original limited objectives of producers. They represent positive attempts to gain specific economies by attacking problems that tend to limit farmers' market returns. Attacks on such problems are likely to be initiated only by producers, who stand to benefit most thereby. Although it seems necessary for producers to protect themselves against market abuses, unless they conceive of cooperation as a means of delegating and integrating essential economic functions with production in order to perfect the commercial organization of agriculture and to improve the processing and market distribution of farm products, they stop short of attempting to gain important potential benefits.

Although cooperative creameries have made some progress in dealing with a number of their problems, the facts presented in subsequent sections of this bulletin indicate a number of directions in which further economies seem possible.

Only in a well-organized industry, are those responsible for its direction constantly alert to perceive current trends, appraise their significance, anticipate probable future developments, and plan and build in the light of all the significant factors. These considerations are of peculiar importance to Iowa dairymen because of the fact that dairy production in Iowa, particularly in some parts of the State, is subject to wide fluctuations.

Even more significant than the variations in production are the changes that have taken place in transportation methods as a result of improved roads. The effect of some of these changes may be as

revolutionary as those which followed the introduction of the hand separator and the Babcock test. The significance of the shift from delivery of butterfat by individuals to delivery by commercial haulers will be discussed later.

Changes have likewise taken place in the relationship between butter-producing and butter-consuming areas and in methods of market distribution of butter. In spite of the fact that creamery-butter production in Iowa has increased to nearly three times the 1918 volume, it is estimated that in 1934 nearly one-third of the total Iowa butter production was consumed within the State.

In an effort to make adjustments to meet these altered situations, cooperative marketing has received a great deal of attention, and many experiments have been tried. As a result of these efforts, the real possibilities and limitations of cooperation in agriculture may be understood more clearly.

Thus, as new problems arise, new adjustments and adaptations on the part of producers and their organizations become necessary. Producers individually can do little about most of these problems; but collectively in groups of sufficient size, they may make available to themselves the specialized services necessary to promote the common interest of the group. Cooperative business and service organizations provide the machinery by which producers may determine the direction in which their best interests lie and by means of which they may promote such interests most effectively.

The foregoing facts, no doubt, set a heavy task for cooperative organizations, but if they, in fact, represent the interest of producers, the cooperatives must assume this burden. Farmers organize cooperatives in order to delegate to them some of the tasks with which it is impossible for individual farmers to deal successfully. When an association is no longer in a position to discharge these duties to the advantage of its members, producers may find it expedient to dissolve the institution. In short it may be just as logical, when conditions have changed, to dissolve an association as to organize an association when one is needed. The mere adoption of the cooperative form of organization is likely to achieve little unless the organization is conceived as an instrument for attaining specific ends, and unless there comes to effective expression through it the aggressiveness of producers who have a clear vision of immediate and long-time objectives regarding the organization of an important industry.

ESSENTIAL FEATURES OF A COOPERATIVE BUSINESS ORGANIZATION

Much has been written and said about methods of organizing cooperatives in order to promote their success. Logical analysis and practical experience seem to agree as to some of the essentials which

because of their fundamental importance cannot be stressed too much. Only a brief discussion of them is possible here.

Since a cooperative may be defined as an organization whose members are its patrons, and whose purpose is to operate for their benefit, it follows that the interests of the patrons are likely to be promoted only if they continue to control the policies of the organization. This means that members must control by virtue of the fact that they are patrons of the cooperative rather than because they have contributed capital to it.

A second implication is that if patrons are to receive the benefits from the business, they must also assume responsibility for promoting and financing the cooperative, because persons seeking merely returns on capital will neither organize nor finance an organization which they do not control and from which they receive no profit.

A third essential follows from the second; namely, since those who supply the patronage, rather than those who supply the capital, receive the profits, they must be willing to assume the responsibility of management and the risks involved.

The fourth essential is as trite as it is consistently violated by cooperatives; namely, a cooperative as conceived above cannot achieve its purpose unless its members assume the responsibility for contributing a sufficient volume of business to insure the attainment of its objective.

To summarize, a cooperative association may be defined as an organization, the members of which are its patrons, and which operates for their benefit; that is, its patrons are its beneficiaries by virtue of the fact that they use its services. This shift in beneficiaries has important economic significance in that the relations of a cooperative with its members are on a basis entirely different from that on which the ordinary business organization has contact with its customers and stockholders or investors. The important features of this relationship in either case have to do with: (1) Control of the affairs of the organization, (2) financing the organization, (3) sharing the benefits and costs, and (4) procurement of adequate volume of business.

Attempts have been made from time to time to formulate principles of cooperation to govern the making of these contacts in such a manner as would promote and assure the accomplishment of cooperative purposes. For instance, the principle of limiting dividends on stock aims at making the member the beneficiary by virtue of the fact that he has contributed patronage rather than by virtue of the fact that he has contributed capital. Likewise, limiting each member to one vote, restricting transfers of stock, and requiring members to be patrons, all aim at retaining control of the organization in the hands of its beneficiaries.

Such principles are not to be regarded as absolute rules to be applied in the same way in every case and under all conditions. In actual

practice, different methods of operation are used successfully by different organizations, and various devices are used in order to retain control in the hands of patrons. These methods and devices represent only means to aid in approximating the cooperative ideal.

The foregoing statement outlines briefly the authors' approach to a study of cooperation in the farm disposal of butterfat. The purpose of the analysis that follows is to appraise the cooperative creameries studied from the point of view of (1) their economic place and purpose in the industry, and the extent to which they have attained their purpose; and (2) the extent to which the prevailing forms of organization and cooperative methods and devices are consistent with cooperative principles and have contributed to the attainment of their objectives.

LEGAL BASIS OF IOWA COOPERATIVE CREAMERIES

GENERAL CORPORATION LAW ³

IN ORDER to gain an understanding of the cooperative character of Iowa creameries and of factors that have influenced it, it is desirable to review briefly the legal basis of cooperative organizations in Iowa.

Prior to 1915, when the first general cooperative law was passed, cooperatives could incorporate only under the general corporation law. Although this law contained no specific provisions relative to cooperative organizations until 1896, many of the early cooperatives incorporated under it included some cooperative features in their organization papers.

Section 1610 of the Iowa Code of 1897 reads in part as follows:

Farmers' mutual cooperative creamery associations shall be exempt from the payment of the incorporation fee provided herein.

In 1909 this section was amended to read in part as follows:

Farmers' mutual cooperative creamery associations, whose articles of incorporation provide that the business of the association be conducted on a purely mutual and cooperative plan, without capital stock, and whose patrons shall share equally in expenses and profits, and domestic building and loan associations and incorporations organized for the manufacture of sugar from beets grown in the State of Iowa shall be exempt from the payment of the incorporation filing fee provided herein.

The apparent purpose of this amendment was to define more specifically the term "mutual cooperative", and to extend the exemption from incorporation filing fees to certain organizations other than cooperative creameries. In 1911 this section was further amended to provide that exemption from incorporation filing fees would extend only to amounts in excess of \$25.

³ Data basis to the discussion of the general corporation law were compiled by W. R. Slemmons, of the Legal Section, Cooperative Division, Farm Credit Administration, Washington, D. C.

The foregoing provisions were included as section 8350 in the Code of 1935.

The first reference in the statute to farmers' mutual cooperative creamery associations made no attempt to define what constituted cooperative performance. The amendment of 1909, however, made a distinct step forward when it required that organizations shall so operate that "patrons shall share equally in the expenses and profits", and the prohibition against stock constituted an attempt in a negative manner to place membership and control on a purely personal basis rather than on the basis of capital contribution.

Since legal enactments sometimes follow rather than precede actual practice, it may be assumed in this instance that the cooperative thought expressed in these amendments was current among the farmers for a considerable time previous to their adoption. Many associations were organized prior to the adoption of the amendment allowing exemption to farmers' mutual creamery associations, some of which were not even incorporated, but were purely informal organizations.

STOCK COOPERATIVE LAW OF 1915

The first specific cooperative law was passed in 1915. This law was patterned after the ordinary corporation law and was typical of the Rochdale type of laws that were adopted by a number of States about that time.⁴

From the point of view of cooperation, this law provided as follows:

1. Each stockholder shall have only one vote regardless of the amount of stock held.
2. No stockholder shall hold stock in excess of \$1,000. (This amount was subsequently increased to \$5,000.)
3. Earnings in excess of expenses, specified reserves, and a limited dividend on stock shall be prorated among the stockholders on a patronage basis.
4. Dividends on stock shall be limited to 10 percent.
5. No funds of the association shall be used for promotion expenses or commissions.

Beyond the foregoing requirements, the law did not definitely define cooperation or the cooperative method of operation. It did not authorize restrictions on the transfer of stock or require members to be producers or consumers of the products handled by the organization. Proxy voting was not prohibited, and provisions assuring that the operations would be carried on for the benefit of patrons were inadequate.

The financial and general corporate structure, and to a considerable extent the operating methods, contemplated by this law resemble

⁴ Nourse, E. G. *THE LEGAL STATUS OF AGRICULTURAL COOPERATION*. 566 pp. New York, 1927. See p. 44.

those of ordinary corporations. Although this law did specifically provide for the proration of profits on a patronage basis to stockholders, as will appear later, the stock method of financing militated against the general participation of patrons in the affairs of the organization. On the other hand, the creameries that organized on a mutual basis in accordance with the amendments to the general corporation law, on the whole, subordinated the financial interest of members to the service interest of patrons.

NONSTOCK COOPERATIVE LAW OF 1921

Not until 1921 did the mutual service concept of cooperation aimed at by the amendment to the general corporation law come to be adequately expressed in a specific law. This was a "nonstock, non-profit" cooperative law, resembling those adopted by several States about that time. It provided that:

1. Membership shall be restricted to producers and consumers of products handled by the association.
2. Membership shall not be transferable.
3. Interest on membership capital shall not exceed 8 percent.
4. Surplus income shall be prorated among the members on the basis of patronage.
5. Each member shall have only one vote, and proxy voting is prohibited.
6. Association funds shall not be used for promotion expenses.
7. Business shall be conducted only with members. (This requirement was changed by a later amendment permitting associations to transact business for nonmembers in an amount not to exceed that transacted with or for its members.)

COOPERATIVE LAW OF 1935

A third specific cooperative law was passed in 1935, largely because the inadequacies of the stock cooperative law had become sufficiently apparent to indicate that a change was desirable. The new law requires cooperatives, whether organized with or without stock, to meet the same high standard of cooperative requirements. It also provides a more definite basis for determining property rights of members, particularly in nonstock organizations, provides greater assurance that operations will be conducted for the benefit of patrons, and in a number of other respects prescribes methods and practices designed to assure performance in accordance with cooperative principles. Previous cooperative laws, however, were not repealed, and although no new cooperatives may be incorporated under them, or under the general corporation law, existing organizations may continue to operate under them.

NUMBER OF CREAMERIES UNDER VARIOUS LAWS

The extent to which Iowa creameries have taken advantage of the different laws is shown in table 1. Only 42 percent of 277 farmers' creameries in operation in 1935 were incorporated under cooperative laws. However, nearly three times as many have taken advantage of the nonstock law of 1921 as of the stock cooperative law of 1915, in spite of the fact that the nonstock law was available to them a shorter period of time. Eight creameries have already taken advantage of the cooperative law of 1935.

TABLE 1.—DISTRIBUTION OF 277 IOWA FARMERS' CREAMERIES ON THE BASIS OF THE LAW UNDER WHICH THEY WERE OPERATING IN 1935

Iowa law under which creamery was operating in 1935	Number of creameries	Percentage of creameries	Number that changed to cooperative laws from prior laws ¹	Number originally organized under cooperative laws
Ordinary corporation law or unincorporated ²	161	58		
Stock cooperative law of 1915.....	32	11	20	12
Nonstock cooperative law of 1921.....	82	30	37	46
New cooperative law of 1935.....	2	1	2	
Total.....	277	100	59	58

¹ The "mutual" creameries originally incorporated under the ordinary corporation law usually change to the nonstock law, but those originally using the stock form more often choose the stock cooperative law when making a change. A few have changed from the stock cooperative to the nonstock law.

² Of the 112 creameries included in this study, four were unincorporated. The unincorporated creameries would probably not exceed 5 percent of the total.

³ Since this analysis was prepared 6 additional creameries have reorganized under the 1935 cooperative law.

The question might be raised why so large a proportion (58 percent) of the creameries still operate under the general corporation law.

In the first place, most of the cooperative creameries were organized previous to the enactment of the first cooperative law in 1915. Of the farmers' creameries in operation in 1935, 70 percent were originally organized previous to 1915. Since few new creamery associations are likely to be organized in the future except in connection with reorganizations, any increase in the proportion of the organizations that operate under cooperative laws will come about as a result of changes from prior laws.

Of the 116 creameries operating under cooperative laws in 1935, 57 were organized since 1915, and their original charters were issued under cooperative laws.

Of the 59 creameries that changed from the general corporation law since 1915, 20 chose the cooperative stock law, 37 chose the nonstock law of 1921, and 8 chose the law of 1935. Of 83 creameries organized since 1915, 71 percent chose one or another of the cooperative laws and 29 percent chose the general corporation law. However, of the 63 new organizations since 1921, at which time the nonstock law was enacted, 87 percent chose one or another of the cooperative laws and 76 percent of these chose the nonstock law.

Another important reason why more creameries have not taken advantage of specific cooperative legislation is that they have apparently been able to carry out successfully their mutual service purpose under the amended general corporation law. This purpose apparently became well crystallized in the early history of the movement. This fact, to a large extent, explains why relatively few organizations have taken advantage of the stock cooperative law of 1915, which inadequately reflects the service idea of cooperation. The fact that the nonstock law of 1921 does more specifically reflect the service idea explains its relatively greater popularity.

A close relationship is apparent between the time of organization, geographical location, and the law under which the creameries are incorporated (figure 3 and table 2). Dairying has been practiced intensively in northeastern Iowa continuously since the early history of the State. This area, therefore, would be expected to witness the earliest and greatest development of cooperative creameries, hence the predominance of incorporations under general corporation law. The creameries which followed the extension of dairying into northwestern Iowa at a later date utilized cooperative laws to a much greater extent, because such laws were available to them at that time. Likewise, in the southern part of the State, where the development of cooperative creameries followed the development of improved roads, use of the nonstock law of 1921 is more general.

GEOGRAPHIC DISTRIBUTION OF THE IOWA FARMERS' CREAMERIES INCORPORATED UNDER EACH OF FOUR IOWA CORPORATION LAWS

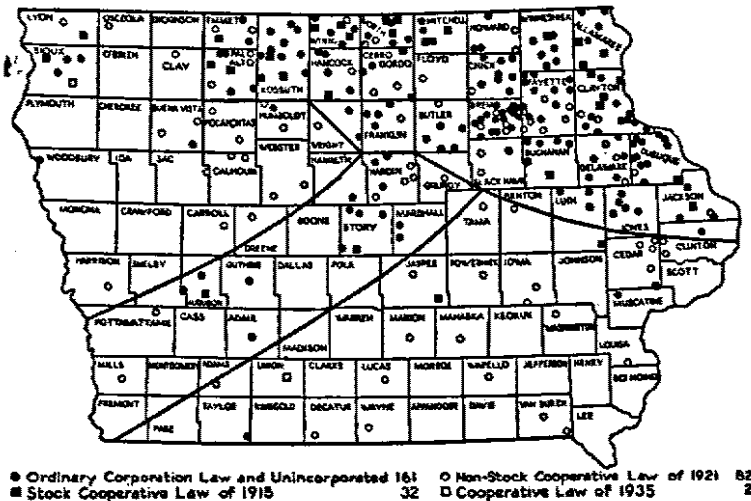


FIGURE 3.

The creameries organized under the ordinary corporation law and stock cooperative law of 1915 are generally in the older dairy section of northeastern Iowa while the nonstock associations are in the more recently developed dairy sections in the south and northwest.

Since cooperative creameries developed in the early dairy areas of Iowa, the cooperative ideas incorporated in them reflect the thinking of dairymen and agricultural leaders of northeastern Iowa, who were largely of northern European extraction, particularly Scandinavian and German, and who, to a large extent, received their cooperative education in Denmark and Germany. Their ideas spread as these people moved to other parts of the State. Audubon, Story, Kossuth, and surrounding counties are examples of areas in which the typically Scandinavian philosophy of cooperation became established as a result of such migration. The development of dairying in other parts of the State, however, carried the cooperative creameries into areas where distinctly nondairying types of farming and where other nationalities prevailed.

TABLE 2.—DISTRIBUTION OF IOWA FARMERS' CREAMERIES ON BASIS OF LAW UNDER WHICH INCORPORATED AND LOCATION

Law under which incorporated	Number of creameries by geographic areas						
	North-east Iowa	Remainder of State				All creameries	
		South-east	South-west	North-west	Total	Num-ber	Per-centage of total
Ordinary corporation law, or unincorporated.....	138	3	14	6	23	181	60
Stock cooperative law of 1915.....	26	2	2	2	6	32	11
Nonstock cooperative law of 1921 and cooperative law of 1935.....	35	23	7	19	49	84	31
Total.....	199	28	23	27	78	277	100

Such differences in the local environment undoubtedly constitute factors which have had considerable influence upon the cooperative character of the organization. It is difficult, if not impossible, to transplant the mutual type of organizations common in northeastern Iowa to southern Iowa. In this area, dairying is not a major farm enterprise; dairy production is relatively sparse, and an adequate volume can be assembled only by truck transportation over considerable distances. Under these conditions, personal participation on the part of patrons in the affairs of the organization is less likely to prevail. Moreover, there is less incentive for the producers to assume the responsibility of membership in a cooperative.

Thus, what may at first appear to be a historical change in the cooperative philosophy among the cooperative creameries is, in fact, attributable mostly to difference in the general situation prevailing in the areas to which dairying has shifted in the course of time.

Since the legal basis of Iowa cooperative organizations represents such a wide range from the point of view of cooperative requirements, it is highly probable that the performance will also represent a wide range. The discussion thus far is designed to present only a general

view of the cooperative character of the creameries. A more detailed analysis is necessary in order to obtain a more intimate view of their real cooperative character and to point out precisely wherein deficiencies in it may exist. In such analysis, neither the law nor the specific features incorporated into the articles and bylaws can be relied upon. It is necessary to examine in some detail the character of the several relationships that exist between the organization and its members and patrons as well as the methods and devices used in an attempt to effectuate the cooperative purpose.

CONTROL AS A PRIVILEGE AND RESPONSIBILITY OF MEMBERSHIP

PROBABLY the most important aspects of the set-up of a cooperative association are those that have to do with controlling its affairs. If the purpose of the organization is to operate for the benefit of its patrons, it follows that the patrons must be members and must exercise control over the activities of the association so as to insure a continuation of operations in their interest.

The control of the associations studied has been examined from the following points of view:

1. Extent to which the privilege to control is accorded to patrons, and exclusively limited to them.
2. Extent to which members assume responsibilities of control.
3. Quality of the control exercised by members.
4. Extent and character of delegation of authority in connection with control.
5. Extent to which the producers' interest is safeguarded in connection with such delegation of authority.

EXTENT TO WHICH PATRONS ARE MEMBERS

For 108 associations with a total of 53,352 patrons, the number of active members was 35,091, or 66 percent of the number of patrons. However, patrons who were members contributed 76 percent of the butterfat received. Although on the average, 2 out of 3 patrons were members; in over 3 out of 10 creameries less than half, and in 1 out of 6 creameries, less than a third of the patrons were members (table 3). In the extreme case, only 5.4 percent of the patrons were members. It is to be noted, however, that a high concentration of creameries occurred in the 100-percent bracket.

Although there are many exceptions, in general, patron representation appears to be sufficient to insure that operations will be carried on for the benefit of patrons. The fact that not all patrons have a voice does not necessarily mean that the interests of patrons are not adequately represented, for much depends upon the extent to which others than patrons also have a voice.

TABLE 3.—DISTRIBUTION OF 108 CREAMERIES ON BASIS OF PERCENTAGE OF PATRONS WHO ARE MEMBERS AND PERCENTAGE OF MEMBERS WHO ARE PATRONS

Percentage	Number of creameries in which specified percentage of patrons are members	Number of creameries in which specified percentage of members are patrons
Less than 10.....	4	0
10-19.....	4	0
20-29.....	11	1
30-39.....	5	2
40-49.....	8	5
50-59.....	6	8
60-69.....	5	11
70-79.....	4	6
80-89.....	5	10
90-99.....	1	18
100.....	55	47
Total.....	108	108
Average percentage.....	<i>Percent</i> 72	<i>Percent</i> 85

EXTENT TO WHICH MEMBERSHIP IS LIMITED TO PATRONS

For 108 creameries an average of 85 percent of the stockholders or members were patrons. In table 3 it is shown that in 6 out of 10 creameries 90 percent or more of the members were patrons. In 1 out of 4 creameries, 25 percent or more of the members were not patrons; and in the extreme case, 77 percent of the members were not patrons.

Among the cooperative creameries studied, voting privileges were not always restricted to members, and in some cases membership privileges were accorded to patrons who were not members; that is, membership was synonymous with patronage, especially in the mutual organizations. But even in organizations incorporated under the nonstock law, which requires that membership certificates be issued to members, not all distinguished between member and nonmember patrons. Hence, the extent to which patrons control a cooperative cannot be determined entirely on the basis of the extent to which members are patrons, or the extent to which patrons are members.

MEMBERSHIP POLICIES AND PRACTICES

The wide variations in the extent to which patrons have a voice in determining the affairs of the creameries result mainly from variations in policy with respect to maintaining membership coextensive with patronage. Such a policy has two principal aspects; namely, that of making members of patrons, and that of terminating the membership of those who cease to patronize.

Since many important differences in membership policy appear to be associated with the presence or absence of capital stock, the analysis

will proceed with a discussion of certain aspects of stock organizations, to be followed by a similar treatment of nonstock organizations.

Capital Stock Organization

It appears that the stock creameries vary widely in the extent to which membership is coextensive with patronage (table 4). On the average, 79 percent of the members were patrons. In a number of cases, however, the percentage fell considerably below 50 percent, the lowest reported being 23 percent. On the other hand, only 37 percent of the patrons of these organizations were members. For 30 of the 47 creameries, less than 50 percent of the patrons were members; for 4 of them less than 10 percent were members, the lowest being 5 percent.

TABLE 4.—DISTRIBUTION OF 47 STOCK CREAMERIES ON BASIS OF PERCENTAGE OF MEMBERS WHO ARE PATRONS AND PERCENTAGE OF PATRONS WHO ARE MEMBERS

Percentage	Number of creameries in which specified percentage of members are patrons	Number of creameries in which specified percentage of patrons are members
Less than 10.....	0	4
10-19.....	0	3
20-29.....	1	10
30-39.....	2	6
40-49.....	5	8
50-59.....	4	5
60-69.....	5	2
70-79.....	3	3
80-89.....	6	5
90 and over.....	21	2
Total.....	47	47
Average percentage.....	Percent 79	Percent 37

The proportion of members patronizing the association depends largely upon the purpose of the organization, on efforts made to acquire new members and to terminate the membership of ineligible members, and the extent to which the plan of organization facilitates turn-over in membership. That it clearly was not the purpose of the stock organizations to make members of a large portion of the patrons is indicated by the fact that 43 percent of those surveyed did not favor a general policy of making members of all patrons. In fact, 37 percent of the stock creameries were acquiring no new members, and many of them reported that no special effort was being made to make members of patrons.

That membership may be made to coincide closely with patronage under the stock form of organization, if it is the purpose to do so, is also clearly indicated. Thirteen of the stock organizations had a definite policy of making all patrons members, and 14 a definite policy

of terminating the membership of ineligible members. Only 9 associations followed both policies, and 30 followed neither.

The results for these four groups of organizations, in terms of numbers of members and patrons and volume of business (table 5) decidedly favor the nine creameries that aimed to make membership depend upon patronage. No doubt other factors contributed to the results shown. The fact that an organization strives to make membership coextensive with patronage is indicative of a high cooperative purpose. No doubt an organization having such a purpose would rank high in cooperative performance.

TABLE 5.—COMPARISON OF RESULTS OF SPECIFIED MEMBERSHIP POLICIES FOR 47 STOCK ASSOCIATIONS

Item	Aim of associations			
	To make members of patrons	To terminate membership of ineligible members	To make members of patrons and to terminate membership of ineligible members	To adhere strictly to neither policy
Number of associations.....	13	14	9	20
Average number of patrons.....	626	640	732	476
Average membership.....	414	394	506	184
Average number of members who patronize creamery.....	370	357	478	126
Average percentage of patrons who are members.....	69	66	65	27
Average percentage of members who are patrons.....	90	91	95	69
Average volume of butterfat received in 1934 (pounds).....	790, 125	830, 704	964, 358	471, 571
Average volume of butterfat received in 1928 (pounds).....	524, 831	612, 532	567, 222	350, 645
Percentage of increase in volume, 1928-34.....	51	36	61	31

Practically all of the stock organizations, however, reported that it was difficult to obtain new members. The difficulties most frequently encountered were:

1. Lack of incentive for patrons to become stockholders.
2. Patrons' lack of funds with which to buy stock.
3. Shares obtainable only by transfer from present holders, since all stock had been sold.
4. Poor financial condition of the creamery.
5. Excessive par value of shares.
6. Refusal of nonproducing stockholders to transfer their shares.

Some of these difficulties have been overcome successfully in individual cases. In order to create an incentive for patrons to become members, three associations charged nonmembers a service or "manufacturing" fee. One required that nonmembers contribute \$5 per month toward the purchase of a \$100 share of stock but permitted patrons to withdraw at any time all but \$5 of such accumulations. Four of the six associations paying patronage dividends limit such payments to members only.

Table 6 shows the relationship between par value of stock and certain member-patron ratios for 47 stock creameries. It is apparent that for those associations having low par value of stock the percentage of patrons who are members is high compared with those associations having high par value. The effect of par value of stock upon the percentage of members who are patrons is not so marked.

TABLE 6.—RELATIONSHIP BETWEEN PAR VALUE OF STOCK AND MEMBER-PATRON RATIOS FOR 47 STOCK CREAMERIES

Par value of stock	Number of creameries	Percentage of members who are patrons	Percentage of patrons who are members
Less than \$10.....	9	83.0	60.4
\$10, \$12, and \$15.....	13	78.7	54.5
\$20 and \$25.....	10	77.6	52.4
\$50.....	10	75.0	39.1
\$100.....	5	75.8	19.2
All creameries.....	47	78.8	37.8

The opportunity for patrons to become members may thus be substantially liberalized by the reduction in par value of stock. At the same time, reduction in par value makes more shares available for new members after the need for further financing by the sale of shares has passed. It also simplifies the retirement of stock held by those who cease to patronize.

It is significant that the stock creameries have, on the whole, retained their cooperative purpose and character to a high degree. Even where a relatively small proportion of the patrons were privileged to vote, the operations of the organizations have, to a large extent, continued to be in the interest of producers. However, the fact that conflicts of interest have arisen in a limited number of cases and have resulted in much dissension and finally complete reorganization, indicates the weakness of a set-up which permits conflicts of interest to develop.

Difficulties that appear to be inherent in the stock form of organization will be discussed in the section on finance.

Control in Nonstock Associations

Producers generally became members of a nonstock organization automatically by patronizing the organization. Neither current patronage nor membership, however, was always the basis of eligibility for control in nonstock organizations. In 55 of the 61 nonstock creameries surveyed, all of the patrons were members. In the other six creameries, from 28 to 73 percent of the patrons were members. In one of these cases, membership was dependent upon the holding of revolving-fund certificates of indebtedness; in the other five associa-

tions, only those patrons who paid a membership fee were regarded as members. The amount of the membership fee in two of these cases was \$1, and in one case each, \$2, \$5, and \$50.

Whereas membership is usually acquired automatically by patronizing the organization, membership is not automatically terminated when the member ceases to patronize. As a result, nearly one out of six members was no longer patronizing the creamery. Frequently, if a member moves out of the territory his certificate of indebtedness is retired in the course of time through the operation of the revolving fund, and since he is no longer present to vote, often no formal action to terminate his membership is taken. Yet, according to most articles and bylaws, he remains a member until such action has been taken.

The results of these policies are apparent from the following figures: Whereas the total number of patrons in 61 nonstock creameries was 28,936, the total number of members was 31,251, or 108 percent of the patrons. The number of patronizing members was 25,973, or 90 percent of the total number of patrons, and 83.1 percent of the total number of members.

The fact that nonstock organizations may require the payment of a membership fee usually militates little, if at all, against acquiring members. Although 40 of the 61 nonstock organizations surveyed provided in their articles of incorporation for the collection of a membership fee, only 26 of the 40 associations actually collected the fee; the other 14 either had never attempted collection or had discontinued it.

Membership fees for 48 of the nonstock creameries included in the survey are as follows:

Amount of fee:	Number of associations
None.....	8
\$0.25.....	1
\$0.50.....	25
\$1.....	11
\$2.....	1
\$5.....	1
\$50.....	1

The fees most commonly charged are 50 cents and \$1, but one out of six associations charge no fees. The fee is usually collected as a deduction from the first cream check or the first certificate of indebtedness issued. Cash payment of fees was required in three cases, cash or deduction from the first cream check, in three cases, and deduction at the rate of 1 cent per pound of butterfat delivered, in one case. In only five cases were membership fees returned to members upon withdrawal. The return of fees is a practice which tends to reduce the proportion of nonpatronizing members, because of the inducement it offers ineligible members to terminate their membership.

A comparison of certain aspects of stock and nonstock organizations may be based on the data shown in table 7. Among the stock organizations in general, the proportion of patrons who become members is lower than among nonstock organizations. This is true even where it is the apparent desire and aim of the stock organization to make members of patrons. However, when the proportion of the members who are patrons is considered, some of the stock organizations have apparently succeeded in retaining control of the organization in the hands of patrons as well as have the nonstock organizations. Others, judging from the difficulties reported in this connection, have had to abandon this purpose after unsuccessful attempts to carry it out.

TABLE 7.—TYPE OF ORGANIZATION AND MEMBERSHIP POLICY AS RELATED TO CERTAIN MEMBER-PATRON RATIOS, FOR 108 ASSOCIATIONS

Type of creamery or membership policy	Number of creameries	Percentage of patrons who are members	Percentage of members who are patrons
<i>Stock creameries:</i>			
All reporting.....	47	37.3	78.8
Associations that aim to make members of all patrons and to terminate ineligible memberships.....	9	65.3	94.5
Associations that do not terminate all ineligible memberships or make members of all patrons.....	30	26.5	68.5
<i>Nonstock creameries.....</i>	61	89.9	92.8

Whereas, none of the stock organizations limited their business to members only, 55 of the 61 nonstock associations did so. This number includes all of the nonstock mutuals incorporated under the ordinary corporation law. It appears to be a question, therefore, as to what extent the generally prevailing practice, among the nonstock organizations, of making members of patrons is dictated by the purpose of the organization or the requirements of the law. In the case of the mutual creameries incorporated under the ordinary corporation law, it was undoubtedly the purpose of the organizations that patrons should constitute their membership. Probably a large proportion of the creameries incorporated under the nonstock law were also motivated by the same purpose, but in some cases what appears to be a purpose to attain a high degree of patron control may, in fact, be merely an attempt to comply with the letter of the law.

Practices Regarding Voting Privileges

In four associations all patrons, whether they were members or not, were allowed to vote (table 5). In 56 other associations all patrons were likewise given the right to vote but the act of patronizing automatically made members of the producers. In 52 associations only members were allowed to vote. In 21 of these 52, members had to be producers but did not need to be patrons. In the other 31, members did not even have to be producers.

Limiting the right to vote.—All of the nonstock organizations without exception limit each member to one vote. Moreover, because of the general practice among nonstock associations of making membership automatic with patronage, practically all patrons have the right to vote. In 11 of these organizations, however, producers were required to patronize the organization for periods of time varying from 2 to 18 months, or until they had delivered from 100 to 1,000 pounds of butterfat, before membership or voting privileges were extended to them. Of the 51 stock organizations, 44 likewise limit each stockholder to 1 vote. Of the remaining seven, two provide in their articles that voting shall be by shares but actually practice the one-man, one-vote principle; four vote by shares, but articles or bylaws limit the number of shares to one per member. Only one of the stock organizations actually allows more than one vote per member.

It may be concluded that the so-called democratic method of voting prevails generally. However, in stock organizations, the right to vote is linked to capital contributions, but in nonstock organizations it is linked to patronage.

Voting by mail or proxy.—Proxy voting and voting by mail are devices that may prove important factors in control. Of 104 creameries reporting on these features, 22 percent permitted proxy voting. All of them were stock organizations. Although no information is available regarding the extent to which proxy voting is actually practiced, it is believed that in general little advantage has been taken of the privilege except in cases of renewals, reorganizations, and similar situations where a representative vote was required. Cases have been reported, however, where individuals with questionable motives have taken advantage of the privilege of voting by proxy.

Whereas 78 percent of the creameries prohibit proxy voting, only half of them provide for voting by mail. Those which provide for voting by mail represent three-fourths of the nonstock organizations, but only one-fourth of the stock organizations. The general corporation law, of course, does not authorize voting in this manner, but the nonstock law specifically authorizes it. Organizations whose membership is highly localized are likely to have little occasion to use it; and nonstock organizations, in which membership depends largely upon patronage, are likely to have few absentee members. When occasions arise, however, which require a representative vote of the members, it is highly desirable that a means be provided for registering the votes of absent members.

Extending the privileges of control to patrons is one thing; the extent to which this privilege is actually used is another matter. Perhaps greater emphasis should be placed upon the responsibilities and obligations that are associated with the privileges of control in a cooperative creamery than upon the privileges themselves. In fact, one of the outstanding difficulties of cooperatives generally is to induce

members to devote an adequate amount of time and energy to the affairs of the organization. A cooperative organization is presumed to do what is beneficial for its patrons, because it is presumed the patrons will control the organization in their own interest. The intelligent exercise of the privilege of control therefore depends upon: (1) The extent to which patrons actually participate in the affairs of the organization; and (2) the extent to which patrons are enlightened as to what constitutes their best self-interest. Hence, it is important to consider the quality as well as the extent of patron participation in control.

EXTENT AND QUALITY OF PATRON PARTICIPATION IN CONTROL

No exact measure of the extent to which patrons actually participate in control of their cooperative creamery is available. Attendance at annual meetings, however, which usually provides about the only opportunity members have of participating in the business, may be regarded as a rough index of member participation. According to available records (table 8), the attendance reported varies from less than 10 percent to several times the number of patrons. It was less than 50 percent of the patrons for over half of the creameries reporting. On the other hand, it exceeded 100 percent of the patrons in approximately one-fifth of the creameries. The meetings of the latter organizations are open to the general public, and special inducements to attend are usually offered in the form of entertainment, outside speakers, and refreshments. Since many, and in some cases probably a large proportion, of those who attend are not members or patrons of the organization, about all these figures indicate is that attendance varies widely and that it is wholly inadequate in a large proportion of the creameries.

TABLE 8.—ATTENDANCE AT ANNUAL MEETINGS REPORTED BY 91 CREAMERIES

Percentage attendance is of total number of patrons	Number of creameries	Percentage of total creameries	Percentage attendance is of total number of patrons	Number of creameries	Percentage of total creameries
Less than 10.....	7	7.7	70-79.....	4	4.4
10-19.....	17	18.6	80-89.....	5	5.5
20-29.....	10	11.0	90-99.....	0	0
30-39.....	6	6.6	100 or more.....	20	22.0
40-49.....	10	11.0	Total.....	91	100.0
50-59.....	4	4.4			
60-69.....	7	7.7			

Quality of Patron Control

The extent to which patrons participate in the affairs of the association is no more important than the quality of the control which they exercise. Since a cooperative affords its patrons the means of

more effectively pursuing their best self-interest, the benefits they receive will depend upon how clearly they see definite opportunities to promote that interest. In other words, a creamery motivated by producers' interest can create savings only to the extent to which the producers, through such an organization, discover and take advantage of definite sources of savings.

Most of the early associations were organized to correct certain unsatisfactory conditions which existed in the local market. The benefits received from the cooperative creameries were most apparent in the comparatively higher prices paid by them, and in their more satisfactory service.

In time, the benefits of an organization usually tend to become less and less apparent in terms of direct price comparisons. Young farmers and newcomers in the community frequently are not familiar with the conditions that led to the organization of the cooperative creamery, nor conscious of improved services and economies that may not be clearly apparent to producers generally. Moreover, because conditions are constantly changing, constant readjustments must be made.

For all of these reasons, the necessity of maintaining an enlightened membership becomes increasingly important. The more familiar producers become with the situation in general, and with their organization in particular, the more competent will they become to blaze new trails, develop new methods, or improve old ones. Only by this process of constant development and growth is it possible for a cooperative to continue to hold the interest and active support of the producers and to maintain its position in the industry.

It cannot, of course, be expected that a large number of patrons can individually keep themselves fully advised regarding all of the details of operation, but it is their definite responsibility to select a leadership that will adequately represent their interests and help them discover opportunities for promoting their interests. After members have selected such leadership they may insist that the management take a constructive attitude toward gathering information of interest to them and disseminating it among them. This will necessitate that facilities be provided that will promote free and open discussion of all matters of interest to them.

Development of Patron Interest

One of the most important factors influencing the extent of active member participation in the business is the extent to which a "membership consciousness" or a sense of responsibility as members is present.⁵ The community creameries of parts of northeastern Iowa

⁵ Further discussion of the development of a consciousness of ownership and a sense of responsibility for the association among its members will be found in the following bulletin: Jones, J. W. MEMBERSHIP RELATIONS OF COOPERATIVE ASSOCIATIONS. F. C. A. Coop. Div. Bull. 9, 111 pp., 111cs. 1926.

exhibit this membership responsibility to a high degree. The creameries are regarded as vital community institutions. Not only is membership in them open to all patrons, but here custom dictates that in order to be a good citizen of the community the farmer must participate not only in the affairs of the church and the school, but in those of the creamery as well.

Something approaching this degree of membership consciousness is also attained by some of the large associations whose trade territory transcends community boundaries, but only as the result of a long-time aggressive educational effort on the part of the management. Too often, where the creamery draws butterfat from a large territory, however, the relationship between the members and the organization is so indefinite that the member fails to feel any sense of responsibility as a member, and consequently neglects the duties of "citizenship" in the organization entirely. This is likely to be true particularly where membership is acquired automatically by patronizing the organization. Membership acquired automatically is likely to mean less to the member in terms of membership responsibility than that acquired after some deliberation and a conscious decision to join, especially where joining involves assumption of important obligations. Frequently, for example, the only contact the more distant patrons have with the creamery is through the truck operator who gathers the cream. Some members have never seen the creamery or any of its officers nor attended any of the meetings of the organization. Under such circumstances, control, though democratic in form, tends to become concentrated among a limited number of members who are sufficiently interested to exercise it.

In any case, the desirability of automatically making members of all patrons is open to serious question on the ground that, desirable as patron control may be, it is only when such control is motivated by an enlightened interest that the cooperative can achieve significant success. Enlightened interest is not automatically attainable.

Although many of the organizations actively attempt to stimulate members' interest by one means or another, too many of them do little or nothing in this respect. A few of the more important of such activities reported are shown in table 9.

More than two-thirds of the creameries provide outside speakers for annual meetings, and more than one-third carry on educational work with members and patrons through their individual efforts or in cooperation with other agencies, such as the county agricultural agent, the Farm Bureau, the Farmers' Union, vocational schools, 4-H Clubs, and other cooperative organizations. Since annual meetings are usually held during the winter, one-third of the organizations hold special meetings during the summer. These meetings, however, are devoted largely to recreational, good-will, or "booster" activities.

TABLE 9.—METHODS USED BY IOWA CREAMERIES TO DEVELOP INTEREST AND A SENSE OF RESPONSIBILITY AMONG MEMBERS

Method	Number of creameries using method	Number of creameries not using method	Total creameries reporting
Outside speakers at annual meeting.....	65	29	94
Educational work undertaken by creamery.....	35	62	97
Participation in educational work done by other agencies.....	35	65	100
Special meetings.....	26	72	98
Circular letters and other literature.....	56	39	95
Publication of annual report.....	72	27	99

Other creamery organizations are not content to limit contact with their members and patrons to annual or special meetings but are constantly at work on the problem. One manager spends considerable time on cream routes, visiting the patrons personally. In other cases, directors and officers, and sometimes cream haulers, assist in similar activities. In general, however, the participation of officers and directors in such activity is negligible.

Specific information as to what is actually discussed or done in connection with these contacts is not available, except that reports were received regarding the subjects discussed at annual or special meetings. The subjects cooperation, marketing, and reorganization were reported 12 times; production and quality improvement problems, 20 times; politics, 4 times; and miscellaneous matters, 4 times. Too often the purpose of such efforts is to solicit patronage and to develop loyalty to the individual creamery rather than to develop an enlightened appreciation of the members' self-interest or of the aims and objectives of the creamery to promote their self-interest, or of the affairs of the organization. The attitude of some managers as well as of some boards of directors definitely discourages active participation on the part of members in the affairs of the organization.

DELEGATION OF AUTHORITY BY MEMBERS

The annual meeting is usually the only opportunity afforded members for direct participation in the affairs of the association. Wide variations exist among the creameries regarding the extent to which the members delegate authority and the extent to which they exercise their prerogatives as members. In some cases even the routine details of management are passed upon by the members. More frequently, however, there is complete delegation of authority to the board of directors, and the most important business transacted at the annual meeting thus becomes the election of board members.

The set-up in practically all cases, however, contemplates that the members shall determine the general purposes and objectives of the organization, but that the board of directors shall formulate policies for effectuating these purposes. Since management is so important a factor in the success of any business organization, one of the most

important responsibilities of members is the selection of the most competent among their number to serve as directors and officers. The importance of this selection is seldom fully realized by members. In many cases, directors themselves fail to appreciate fully the extent of their responsibility as such. Although it is necessary to delegate considerable authority to managers and butter makers, it has been adjudged that directors are legally responsible and liable for the acts of any of the employees of the organization.⁶

Although directors participate to a considerable extent in the actual management of the creameries, the burden usually falls mostly upon managers and butter makers. Nearly two-thirds of the creameries studied were managed by the butter makers and the other one-third by full- or part-time managers or secretaries. The general education, training, and experience of managers and butter makers vary widely. On the whole, they have had considerable experience and training in the technical aspects of butter making and factory operation, but most of their training for management has been acquired through experience. Many of the creameries are too small to permit the employment of both a manager and a butter maker; hence, management is likely to be neglected or the responsibilities delegated to those inadequately equipped by training and experience to assume them. Many of the small creameries receive too little managerial direction, or receive it from those who have too little time to devote to the creamery's business or who have inadequate business experience and training.

The relationship between the members and the board of directors, and between the board and the managers and butter makers, in many cases needs to be established on a more satisfactory basis. Frequently, members and boards assume that when they have delegated authority they have also thereby released themselves from responsibility. Conversely, managers and butter makers are frequently expected to assume responsibilities without having been given a corresponding amount of authority. On the other hand, since managers and butter makers are usually given considerable authority, they sometimes take the attitude that they are, in fact, "running the business", and forget that they are responsible to the directors.

Since of necessity much authority needs to be delegated by members to boards of directors, and by boards of directors to employees, the provision of means whereby members and directors may keep themselves informed regarding all aspects of the business is of the

⁶ Equity No. 7565, in the District Court of the State of Iowa, in and for Emmet County, *Waitins Greis Company v. Frazier Smith Company*:

It is his (the director's) duty to know what is being done by the executive officers or employees of the company and he cannot ignore or neglect these duties and then escape liability, or the corporation which he represents escape its liability by pleading the negligence of the directors. A director representing a corporation is conclusively bound to know these things which would be disclosed and which he would know had he given the business that reasonable attention and observation that a man of ordinary care and prudence would give to his own business under the same or similar circumstances.

greatest importance. Adequate records and reports must be provided and they must be studied and interpreted. Most of the creamery associations keep fairly adequate records—many of them excellent ones. In other cases the records are wholly inadequate.

It is highly desirable that the books and records be audited by a competent and disinterested accountant, and if possible analyzed and interpreted by him in nontechnical language, not only to the board of directors but to the members at the annual meetings. In addition, a considerable number of the creameries should avail themselves of competent accounting and auditing service to examine and verify the records.

Whereas an audit may detect dishonesty, the purpose of bonding officials responsible for the funds of the organization is to protect the association against loss that may result from misappropriation of funds. It was found, however, that 42 of the 112 associations did not bond their officials; neither did most of these associations have their books audited. Failure to protect the association against possible losses from these sources is as short-sighted a policy as failure to insure the association against fire losses. One association that had suffered a loss of \$1,900 through misappropriation of funds by the secretary still failed to bond the new secretary, the explanation being that "this time we have chosen an honest man." Obviously no board will knowingly choose a dishonest official, yet instances where losses as high as \$12,000 have occurred may be cited. Other cases may be cited of associations that have recovered substantial misappropriated sums because the officials were under bond.

FINANCIAL RELATIONSHIP BETWEEN THE COOPERATIVE CREAMERY AND ITS MEMBERS AND PATRONS

AS INDICATED above in the discussion of control in Iowa farmers' creameries, the patrons' interest, with the exceptions noted, is represented in determining the policies of the creameries to such an extent that the patrons, as such, are the chief, if not the sole beneficiaries of the operations of the creameries. Under these circumstances, people seeking profits can hardly be expected to invest their funds in these organizations. Since a large proportion of the creameries appear to be adequately financed, however, the methods of financing used must have been fairly consistent with the cooperative aims of the organizations. The experiences of the creameries in this respect, however, have not been uniformly satisfactory. For this reason it was undertaken to examine the methods of financing used and to appraise them from the point of view of their adaptability to the cooperative type of business organization.

Any plan of financing that proves satisfactory from this standpoint must meet certain specific requirements: (1) It must subordinate the interest in return on capital invested to the interest in return on products; (2) it must provide adequate capital, either in the form of cash or credit, and it must make adequate provision for the liquidation of indebtedness; (3) it must distribute the financial burden among the patrons in proportion to their patronage, which means that those who use the organization must assume the responsibility of financing it; (4) it must enable the organization to operate successfully under existing competitive conditions.

CAPITAL REQUIREMENTS OF IOWA FARMERS' CREAMERIES

The amount of capital required to operate a creamery is relatively large, as indicated by the figures in table 10, in which creameries are classified on the basis of the total assets employed in the business. The total assets for the 77 creameries for which figures were available averaged \$34,482 and ranged from \$9,000 to over \$100,000.

On the average \$18,440, or 54 percent of the total assets, consisted of plant and equipment and other fixed assets (fig. 4). The remainder consisted of cash, receivables, inventories of supplies and butter, and other current assets.

TABLE 10.—DISTRIBUTION OF 77 CREAMERIES ON THE BASIS OF AMOUNT INVESTED IN TOTAL ASSETS

Investment in total assets ¹	Number of creameries	Percentage of total creameries	Investment in total assets ¹	Number of creameries	Percentage of total creameries
Less than \$10,000.....	1	1.0	\$50,000-\$59,999.....	2	2.6
\$10,000-\$14,999.....	13	17.0	\$70,000-\$79,999.....	2	2.6
\$15,000-\$19,999.....	13	17.0	\$80,000-\$89,999.....	2	2.6
\$20,000-\$29,999.....	19	24.6	\$90,000-\$99,999.....	3	3.9
\$30,000-\$39,999.....	10	13.0	\$100,000 or more.....	1	1.3
\$40,000-\$49,999.....	5	6.5			
\$50,000-\$59,999.....	6	7.8	Total.....	77	100.0

¹ The average amount of assets per creamery was \$34,482 and the range from \$9,301 to \$107,821.

The proportion of the total capital invested in fixed assets, however, varied from 24 to 93 percent, and for half the creameries it was between 50 and 70 percent of the total assets (table 10). Farmers and organizers frequently underestimate the total amount of working capital that will be needed.

TABLE 11.—DISTRIBUTION OF 77 CREAMERIES ON THE BASIS OF RATIO OF TOTAL ASSETS TO FIXED ASSETS

Percentage fixed assets are of total assets	Number of creameries	Percentage of total creameries	Percentage fixed assets are of total assets	Number of creameries	Percentage of total creameries
20-29.....	4	5	70-79.....	19	13
30-39.....	9	12	80-89.....	5	7
40-49.....	10	13	90 and over.....	1	1
50-59.....	21	27			
60-69.....	17	22	Total.....	77	100



FIGURE 4.—TYPICAL COOPERATIVE CREAMERY PLANTS IN IOWA.
Plant, equipment, and other fixed assets represented 54 percent of the total assets of the associations studied.

Many factors influence the amount of capital needed. One of the most important of these is the volume of business to be handled. It was found that, as the volume of butterfat received rose from less than 200,000 pounds to 1,500,000 pounds or more per year (table 12), the total capital rose from \$14,000 to over \$80,000. Wide variations, however, occur, as disclosed by the figures in the last column of the table.

TABLE 12.—VOLUME OF BUTTERFAT HANDLED AND CAPITAL INVESTMENT REPRESENTED BY CURRENT, FIXED, AND TOTAL ASSETS OF 77 ASSOCIATIONS

Butterfat handled (1,000 pounds)	Number of creameries	Current assets		Fixed assets		Total assets	
		Average	Percent- age of total assets	Average	Percent- age of total assets	Average	Range
Less than 200.....	7	\$5,233	37	\$8,951	63	\$14,184	\$9,300-\$20,000
200-309.....	28	7,649	37	13,060	63	20,709	10,100-42,500
400-599.....	11	12,001	40	17,681	60	29,682	18,100-80,000
600-799.....	11	14,364	44	17,567	56	31,931	17,700-85,000
800-999.....	7	21,656	44	27,730	56	49,386	31,200-97,000
1,000-1,499.....	6	26,320	48	31,189	52	60,519	42,600-93,600
1,500 and over.....	7	49,235	61	31,492	39	80,727	54,500-107,800
All creameries.....	77	16,040	46	18,442	54	34,482	9,300-107,800

It was noted that as the volume increased, current assets as a percentage of total assets increased markedly. The prevailing practice of pooling and deferring payments for butterfat tended to make the inventory and receivable items of the balance sheet proportional to volume. On the other hand, a seven-fold increase in volume was associated with only a four-fold increase in fixed assets.

An important consideration in this connection is the extent to which the total capital requirements are a burden upon the patrons, assuming that they carry the entire burden. This is brought out in table 13, which shows a distribution of creameries on the basis of the amount per pound of butterfat handled invested in fixed, current, and total assets. The averages are 3.7 cents in fixed, 2.5 in current, and 6.2 cents in total assets for each pound of butterfat handled. The amounts required to finance fixed assets ranged from 1 to 17.6 cents per pound of butterfat; the range for current assets was from 0.3 to 6.6 cents and for total assets, from 2.5 to 21.3 cents.

The range in total assets for 57 percent of the creameries, however, was between 3 and 6 cents per pound of butterfat. The extremely high figures were for creameries handling small volumes of business or having excessive investments in plants and equipment.

In connection with the foregoing figures, it should be realized that the volume handled by individual creameries, in comparison with their capacity, varies greatly. Whereas some creameries operate at

volumes much less than their capacity, others handle volumes in excess of their normal capacity. This, among other factors, influences the amount of capital required per pound of butterfat handled.

TABLE 13.—VOLUME OF BUSINESS AND AMOUNT INVESTED IN ASSETS PER POUND OF BUTTERFAT HANDLED, 77 ASSOCIATIONS

Butterfat handled (1,000 pounds)	Creameries	Average investment per pound of butterfat handled			Range in investment per pound of butterfat handled
		Current assets	Fixed assets	Total assets	
	Number	Cents	Cents	Cents	Cents
Less than 200.....	7	2.1	6.1	9.2	4.9-21.3
200-399.....	28	2.3	4.5	7.0	3.4-11.2
400-599.....	11	2.6	4.0	6.6	3.2-19.5
600-799.....	11	2.0	2.6	4.6	2.7-9.5
800-999.....	7	2.4	3.1	5.5	3.7-10.4
1,000-1,499.....	6	2.2	2.3	4.5	3.9-6.2
1,500 and over.....	7	2.4	1.6	4.0	2.5-5.2
All creameries.....	77	2.3	3.7	6.2	2.5-21.3

As noted above, the average total capital requirements for the creameries studied amounted to 6.2 cents per pound of butterfat received. On this basis, a deduction of 1 cent per pound of butterfat would pay for the entire assets of the average creamery in 6.2 years and for the fixed assets in 3.7 years. The financial burden therefore, should rest lightly upon the individual patrons, provided it is equitably distributed among them.

PROPORTION OF CAPITAL PROVIDED BY MEMBERS AND PATRONS

In the case of the average creamery as of the end of the fiscal year, 1934, members and patrons had provided in various forms (see pp. 33-34) \$29,153 out of \$34,482, or 85 percent of the total capital (table 14). It is significant that the creameries, on the average, rely on outside sources for capital to a relatively small extent. Only 6 percent of the capital consisted of borrowed funds and 9 percent of credit extended by supply houses and other current creditors.

TABLE 14.—SOURCES OF CAPITAL OF 77 ASSOCIATIONS

Source of capital	Average amount of capital per creamery	Percentage of total capital
Members and patrons.....	\$29,153	85
Banks and private creditors.....	2,225	6
Current creditors.....	3,104	9
Total.....	34,482	100

Members and patrons have contributed 70 percent or more of the total capital requirements in 85 percent of the associations studied

and 90 percent or more of the total requirements in over half the creameries. This is true to about the same relative extent in each of the different types of creamery organizations.

Some reasons for variations in the proportion of total capital provided by members and patrons are: (1) Length of time the creamery has been in operation; (2) rate at which the creamery is paying its debts; (3) extent to which new or additional capital may be required; (4) type of organization and method of financing used; and (5) extent to which members are required to assume responsibility for financing the organization.

Since the accumulation of capital usually requires time, the length of time the creamery has been in operation is an important factor affecting the amount of capital contributed by patrons. Few, if any, of the organizations had as many members and patrons, or as much capital invested in facilities, or as large a volume of business, at the beginning of operation as subsequently. Moreover, many creameries in order to begin operation, had to incur indebtedness, which was subsequently repaid, either out of earnings or out of accumulations of capital on the part of members and patrons. The data shown in table 15 indicate that the creameries which had been in operation less than 5 years were financed by members and patrons to the extent of 67 percent of their total assets. This percentage is higher for associations having longer periods of operation, but little change in the percentage occurs between groups having operated 20 years or more.

TABLE 15.—PERIOD OF OPERATION AND PERCENTAGE OF TOTAL ASSETS FINANCED BY MEMBERS OF 77 ASSOCIATIONS

Years of operation	Number of creameries	Percentage of total assets financed by members	Years of operation	Number of creameries	Percentage of total assets financed by members
Less than 5.....	10	67	30-34.....	2	97
5-9.....	18	73	35-39.....	5	92
10-14.....	11	78	40-44.....	5	94
15-19.....	7	88	45 or more.....	5	93
20-24.....	3	91			
25-29.....	4	90	All creameries.....	77	84.6

Not all creameries accumulated capital or liquidated indebtedness at the same rate, and not all of them had the same amount of capital in the beginning. Moreover, the figures presented are based on their present financial condition, and hence may not indicate the full amount of capital accumulated in the past. In some cases, part or all of such capital has been dissipated through mismanagement, operating losses, bank failures, and otherwise.

FORMS OF CAPITAL PROVIDED BY MEMBERS AND PATRONS

Capital may be provided by members and patrons in various forms, as follows: (1) Membership capital contributed as cash at the time of joining the association or subsequently in the form of specific capital

deductions, that is, capital stock, certificates of indebtedness, revolving fund deductions, and membership fees; (2) surplus earnings retained by the organization, or deductions of which no allocation to individual patrons is made or for which no evidence of individuals' interest is issued; and (3) deferred payments to patrons for butterfat delivered. The amount of capital derived from each of these sources for 77 creameries is shown in table 16.

TABLE 16.—SOURCES OF MEMBER-PATRON CAPITAL ACCUMULATIONS AND THEIR RELATIVE IMPORTANCE IN 77 ASSOCIATIONS

Source	Capital derived from members and patrons		Member-patron capital as a percentage of total assets
	Amount	Percentage of total	
Membership capital.....	\$10, 188	35	29.8
Surplus.....	12, 252	42	35.8
Deferred payments to patrons ¹	6, 748	23	19.6
Total.....	29, 188	100	84.8

¹ Although the balance sheets for 11 creameries showed no deferred payments, 10 of them actually deferred payments an average of 15 days.

More than one-third of the total capital contributed by members and patrons was in the form of stock, membership fees, and deductions, and about one-fourth in deferred payments. Unallocated surplus was equal to 42 percent of the capital provided by members and patrons and over one-third of the total assets. This has important implications that will be discussed later. Deferred payments as a source of capital are relatively more important than the figures indicate. The figures here presented are based on balance sheets which in 11 cases showed no deferred payments, in spite of the fact that 10 of them actually deferred payments an average of 15 days. Some creameries close their books after settlement has been made with patrons.

There was considerable variation among the different types of organizations in the proportion of the total capital obtained from each source (table 17). For purposes of further discussion the creameries have been classified into three types, largely according to their financial characteristics. Thus, "stock" creameries are those which use stock as a means of financing and in which ownership and control are definitely identified with stock holding. "Mutual" creameries are those which make members of all patrons and are financed entirely by funds withheld from the proceeds of products handled. No evidence of ownership or interest in the funds withheld is issued to the patrons; all member and patron financing appears in the balance sheet as surplus. (The term mutual is used here in the sense that Iowa creameries use it and should not be confused with the wider connotations the term is given generally in definitions of cooperatives.) "Revolving fund" creameries are those which derive capital through deductions from the proceeds of products handled, which deductions are credited to the accounts of patrons. When sufficient capital has been accu-

mulated the proceeds of continued deductions are used to retire the oldest credits outstanding. Thus the capital is revolved. In Iowa all of the revolving-fund associations are organized under the non-stock law of 1921 or the new cooperative act of 1935. No associations having capital stock which revolved their capital were found in Iowa. Other differences between these three types of organizations and their implications will appear in the subsequent discussion.

TABLE 17.—RELATIONSHIP BETWEEN SOURCE OF CAPITAL AND TYPE OF ORGANIZATION FOR 77 ASSOCIATIONS¹

Form of capital	Percentage of total assets financed from specified sources by—		
	Stock creameries	Revolving-fund creameries	Mutual creameries
Stock, membership fees, and revolving-fund deductions.....	30.6	52.3	0
Surplus.....	38.3	15.3	70.7
Deferred payments to patrons.....	20.1	19.4	20.3
Total from all sources.....	89.0	87.0	91.0

¹ Includes 35 stock creameries, 30 revolving-fund creameries, and 12 mutual ones.

The practice of deferring payments to patrons was prevalent among all three types of associations. On the average, one-fifth of the total capital requirements was obtained from this source. The creameries differed considerably, however, with respect to the relative importance of surplus and specific contributions, from which sources organizations of each type obtained over two-thirds of their total capital. In this connection, the points of outstanding interest are: The relatively large amount of capital contributed by members and patrons to associations of the revolving-fund type, and the relative unimportance of surplus as a source of capital in these organizations; the complete absence of specific capital contributions on the part of patrons and the relative importance of surplus in the mutual organizations.

In revolving-fund organizations, certificates of indebtedness and allocated revolving-fund deductions account for the relatively great importance of membership capital; whereas, the mutuals depend for their capital mostly upon surplus and unallocated deductions.

The importance of deferred payments to patrons depends upon the prevailing price of butterfat and upon the length of time that payment is deferred. Some difficulties that may result from fluctuations in price, where too much dependence is placed upon deferred payments as a source of capital, will be discussed later. It was found, however, that as the number of days payment was deferred increased from less than 20 to 40 or over, the percentage of total assets financed by means of deferred payments increased from 3.9 percent to 32.3 percent (table 18). The range for each group is wide, indicating that other factors also influence the extent to which deferred payments finance the total assets.

TABLE 18.—RELATIONSHIP BETWEEN LENGTH OF TIME PAYMENT TO PATRONS IS DEFERRED AND RATIO OF TOTAL ASSETS TO AMOUNT OF DEFERRED PAYMENTS

Number of days payments were deferred	Number of creameries	Percentage of total assets represented by deferred payments	
		Average	Range
Less than 20.....	13	3.9	0-24
20-29.....	26	19.4	4-30
30-39.....	28	27.0	12-43
40 or more.....	10	82.3	14-98
All creameries.....	77	20.9	0-98

The foregoing analysis presents a cross-section view of the extent and character of member and patron financing at the time of the study. It has been shown, however, that time is an important factor affecting the accumulation of such capital. Moreover, many of the associations have changed their plan of financing since they were organized; and their present financial structure is the result, not only of such changes, but of the earlier method used. Hence, in order to obtain a more complete understanding of the present financial arrangements and to emphasize the dynamic character of the problem, it is necessary to review briefly their financial history.

ORIGINAL METHODS OF FINANCING AND SUBSEQUENT CHANGES

With some exceptions, the total assets of the creameries at the time of the study were larger than the respective amounts with which they had started operation. Although the problem of raising the initial capital is of great importance at the time a new organization is being launched, it appears that the problem of financing subsequent expansion is of still greater importance. Moreover, the method adopted for financing original requirements may seriously affect the financing of subsequent requirements.

Information regarding the details of methods used in financing original assets and the relative importance of different sources of capital for financing subsequent increases in assets, was available for 46 creameries (table 19).

The outstanding facts revealed by these figures are:

1. The relative value of total assets involved when the creameries started operations was small as compared with the value of the present assets.

2. Slightly more than half the original capital consisted of cash paid in for stock and certificates of indebtedness.

3. The amounts borrowed by revolving-fund and mutual creameries were relatively greater than the amounts borrowed by stock organizations. The mutual creameries were financed entirely by borrowed

TABLE 19.—SOURCES AND AVERAGE AMOUNTS OF ORIGINAL AND PRESENT CAPITAL FOR 46 CREAMERIES, CLASSIFIED BY TYPE¹

Source of capital	Amount of capital			
	Stock associations	Revolving-fund associations	Mutual associations	Average for all associations
Original capital:				
Cash paid in.....	\$5,027	\$6,876	-----	\$5,324
Borrowed.....	2,457	5,493	\$9,724	4,638
Total.....	7,484	12,369	9,724	9,962
Present capital:				
Member capital.....	7,903	16,497	-----	10,967
Surplus.....	13,432	4,442	22,625	10,327
Deferred payments to patrons.....	6,601	7,341	14,219	7,767
Current liabilities.....	3,074	2,355	8,492	3,333
Borrowed.....	782	3,409	-----	1,900
Total.....	31,792	34,044	45,336	34,296
Average age of creamery (years).....	29	9	31	20
Average annual increase in assets (percent).....	11.2	19.5	11.9	12.2
Increase in present membership capital over original amount of cash paid in.....	\$2,876	\$9,621	-----	\$5,640
Percentage of average annual increase in membership capital.....	1.9	15.5	-----	5.3
Average volume of butterfat handled in 1934 (pounds).....	699,000	647,000	913,000	701,000

¹ Includes 20 stock, 21 revolving-fund, and 5 mutual associations.

money, secured in most cases by collateral notes and other guaranties signed by directors and members.

4. The rate of increase in total assets was relatively rapid; the average was 12.2 percent per year for the average operating period of 20 years.

5. An average of 15 percent, a relatively small proportion of the present total assets, was financed by capital in the form of cash actually paid into the organization by members.

6. A relatively large proportion, 85 percent, of present assets was financed by members and patrons through revolving-fund and other deductions and profits, and by deferred payments to patrons. That is, the *product* rather than cash contributions was the source of the bulk of the capital.

7. The annual rate of capital accumulation of revolving-fund organizations was more rapid than that of either stock or mutual organizations. Part of this difference is explained by the fact that the revolving-fund organizations are relatively young and have not yet made their maximum growth, or have done so only recently. Other reasons will be discussed later.

The figures for the five mutual organizations are probably not typical of such organizations in general. Most mutual associations are small, and many of those visited did not have adequate records and so were unable to furnish financial data. Moreover, most of them are old organizations and information regarding their early financial history was not generally available. The figures for the stock and the revolving-fund organizations are more typical of their

respective types, except that a number of the revolving-fund organizations included in this table had only recently been organized as such, having undergone reorganization because of financial difficulties encountered while operating under other plans. This fact, and the fact that they are newer organizations, explains their relatively larger indebtedness. The amount of current liabilities shown for the mutual organization is large mainly because of the fact that one of those included operates a retail store and had a large amount of current liabilities.

Figure 5 is presented to illustrate the experiences of four creameries with respect to capital accumulation. Creameries A and C are stock organizations, and B and D are nonstock associations.

Creamery C started in 1913, but the first balance sheet available was for the year 1918, when total assets amounted to a little over \$15,000. The assets had increased to \$73,000 by 1934, all of which increase resulted from additions to capital stock and surplus. In this case additional stock was sold outright and paid for in four installments deducted from cream checks.

Creamery A, also a stock organization, is perhaps more typical of the stock organizations, in that the amount of capital stock has not increased appreciably, most of the capital accumulation consisting of earnings left in the business as surplus.

Creamery D is the first nonstock revolving-fund creamery organized in Iowa. At the end of its first year's operations in 1924, its total assets were slightly more than \$30,000, which had increased to over \$75,000 by 1934. The indebtedness was liquidated and the expan-

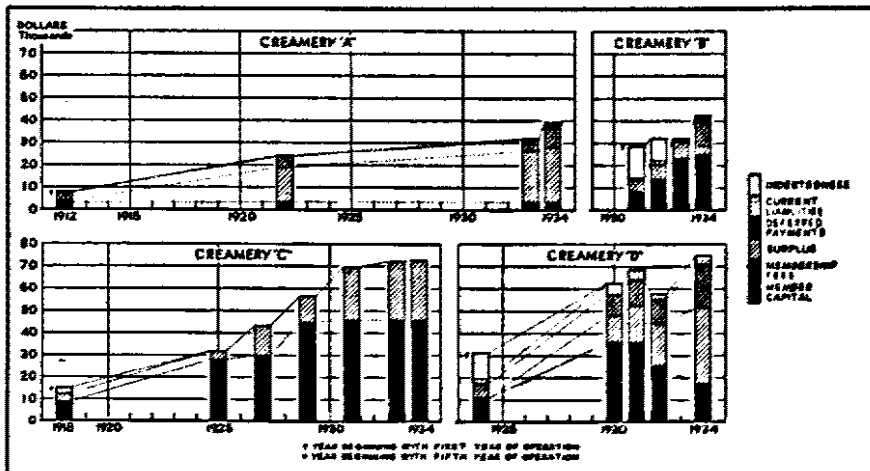


FIGURE 5.—FINANCIAL REQUIREMENTS AND SOURCES OF CAPITAL OF FOUR SELECTED COOPERATIVE CREAMERIES.

Financing increases in assets, required as the business grows, is a more important problem than financing original assets. Methods of financing such growth vary and may affect the cooperative character of the association.

sion in assets financed mostly out of increases in membership capital, deferred payments to patrons, and surplus, the latter becoming relatively more important in recent years. The decrease in membership capital since 1932 was brought about by a deliberate policy of retiring certificates of indebtedness out of surplus.

Creamery B is a relatively new organization that has made rapid progress since organization. The rapid disappearance of indebtedness is particularly noteworthy. In this case, surplus is relatively unimportant, as compared with membership capital and deferred payments to patrons. A definite policy of maintaining a high dispersion of capital among members and patrons is followed in this case.

Effect of Original Methods of Financing on Present Type of Organization

Not only have significant changes occurred in capital requirements and in methods by which they have been met, but changes have also occurred in the type of the organization during the life history of many of the creameries. Reference has already been made to creameries that have changed from one law to another, but changes in type may occur even though no change occurs in legal structure.

Our interest at this point centers around the effect that the methods used in originally financing the creameries have had upon the present type of the organizations. Basically, there is only one source of capital available to a cooperative organization—the members. They must either contribute capital in the form of cash, or provide credit on the basis of which cash may be obtained from others.

In some cases members have contributed in the form of cash all of the capital that was necessary to start the organization. Usually, however, they contributed only a part of the capital required and the remainder had to be borrowed. On the other extreme, are cases where farmers have contributed nothing in the form of cash but have provided credit in the form of collateral notes, which in some cases were so drawn as virtually to obligate the members to patronize the organization, at least until the debts were paid.

This study indicates that it may make considerable difference subsequently which of these methods are adopted originally, and particularly what form of organization is adopted in connection with a given method of financing.

A total of 73 creameries started with substantial cash contributions of capital (table 20). Of this number, 52 issued stock for such contributions. Eight of these associations subsequently changed either to the revolving-fund or the mutual type of organization, at which time the financial interest of the original stockholders was liquidated by repayment. Another organization changed to the mutual type before expiration of the charter, at which time the stockholders' interest likewise was liquidated. Thus, 43 of the 52 organizations that issued stock have remained on a stock basis.

TABLE 20.—EFFECT OF CASH AND CREDIT METHODS OF ORIGINAL FINANCING ON CHANGES IN FORM OF ORGANIZATION

Method of financing	Number of associations using indicated form of organization					
	Originally			At present		
	Stock	Revolving fund	Mutual	Stock	Revolving fund	Mutual
73 associations originally financed by substantial contributions of capital in the form of cash:						
Stock, still retained and outstanding.....	43			43		
Stock, retired at time of reorganization.....	8				8	8
Stock, retired before expiration of charter.....	1					1
Certificates or notes with intention to revolve:						
(a) Continuing to revolve.....		16			16	
(b) Revolving discontinued.....		3				3
Membership certificates, continuously.....			2			2
Total.....	52	19	2	43	24	9
38 associations originally financed on basis of credit only:						
Stock, issued as collateral notes were paid:						
(a) Retained in full standing.....	6			6		
(b) Ignored, financial interest not recognized.....	5					5
(c) Repaid but still outstanding.....	1			1		
Stock, issued against surplus and still outstanding.....	1			1		
Certificates or notes with intention to revolve:						
(a) Continuing to revolve.....		12			12	
(b) Revolving discontinued.....		1				1
No special financing, surplus accumulated out of earnings and deductions—continued without change.....			12			12
Total.....	13	13	12	6	12	16
Total for 111 associations.....	65	32	14	51	36	27

Of the 73 creameries that started with substantial cash contributions, 19 issued notes or certificates for the cash contributed with the intention of revolving the capital out of subsequent revolving-fund deductions assessed against butterfat delivered. Three of them, however, encountered difficulty and ceased to revolve the capital and thus became mutual organizations.

Only 2 of the 73 creameries that started with substantial original cash contributions issued memberships for the cash paid in. Although they are here classified as mutual organizations, the status of the memberships sold is such that they resemble stock more than non-stock organizations.

The original capital of 38 associations, however, was obtained entirely on the basis of credit. In 12 cases subscribers gave notes for stock subscribed, stock certificates being issued to the subscribers when the notes were liquidated out of deductions from cream checks. In the thirteenth case stock was issued out of subsequently accumulated surplus. In 6 of the 13 creameries that issued stock, the stock is still outstanding. In five cases, however, the stock was revoked, annulled, or ignored; and these organizations now operate as mutual associations. In one case the stock was entirely repaid, but the stockholders retained the stock certificates as evidence of membership. The stock also remains outstanding in the case of the creamery that issued stock out of surplus, but a conflict of interest has developed between the patrons and the stockholders in this case.

Of the 38 organizations that were financed on a credit basis, 13 issued certificates of indebtedness or notes with the intention of revolving the capital out of subsequent deductions. All but one continued to revolve the capital, and that one has become a mutual association. Of the 12 creameries that started as mutual associations, all continue as such.

Thus, it appears that associations starting as revolving-fund and mutual organizations have tended to retain their original status. Stock organizations starting with substantial cash investments have tended to continue to identify ownership and control with stockholding; but when their original capital is obtained on the basis of credit and their indebtedness is liquidated out of subsequent deductions and earnings, they tend to place less emphasis upon the investment interest and to subordinate it to the patronage interest. Stockholding is now associated with control in only 6 of the 13 cases where stock was issued as collateral notes of the members were retired. In two cases it is much less definitely so, and in five cases it has been completely ignored.

When stock is issued to subscribers as their notes are liquidated out of deductions, the feeling seems to be that the holders have paid nothing for the stock. The stock certificates are regarded more as certificates of membership than as evidence of proprietary interest. In most cases, stock was issued because farmers were familiar with stock and no other satisfactory method of handling the situation seemed to be available or known to them. Since the passage of the nonstock law, however, the revolving-fund method of financing, and membership certificates independent of the financial relationship, have been substituted for stock.

In view of the fact that in some cases the legal status of the stock is uncertain, it is surprising that more legal difficulties have not arisen. That the stock does have value and legal status, however vague, in a few cases, has already been the cause of serious difficulties. It is much to the credit of the stockholders, however, that on the whole their interest as such has been subordinated to the patrons' interest. It is nevertheless desirable that property rights of members be recognized and established on a definite basis in order to avoid subsequent difficulties and litigation. It is important that such property interest be definitely disassociated from control if conflicts of interest are to be avoided.

BASES OF CREDIT

Where the producers' credit is used as a basis for raising the original capital, members usually sign individual collateral notes, which are canceled and returned to the signers when the debts have been paid. In some cases, no evidence of ownership is issued to such signers; but where stock is issued, it may be issued either to all patrons who sup-

plied products during the period in which the indebtedness was being liquidated, or only to those who signed notes.

Unless the move for the cooperative creamery originates with producers themselves, it is often difficult, if not impossible, to obtain sufficient credit in the form of individual collateral notes. It then becomes necessary for financially responsible individuals in the community to pledge their personal assets. Public-spirited farmers and businessmen have done this in many instances. Creamery equipment and supply firms have also been important sources of capital. Too often, however, the burden falls upon the members of the board of directors, which is unfair to those who assumed such burdens and violates fundamental cooperative principles. The fact that a few individuals are carrying most of the financial burden may jeopardize the cooperative character of the organization, because when financial difficulties arise those who furnished the capital in large amounts are forced to assume control of the organization in order to safeguard their financial interests. Although they as individuals may be justified in doing so, it is a risk that the cooperative organization should avoid.

The physical facilities of the creameries may, of course, be used as security for loans, provided the members have contributed sufficient capital to provide a margin of safety to the lending agency. This is, in fact, a common method of raising capital among Iowa creameries, and is a sound procedure if definite and adequate provisions are made for repayment. Adequate provisions have not been made in some cases, and the creditors have been forced to foreclose.

Finally, the product handled by the association may be used as a basis for credit. However, in order that it may be used for this purpose, the patronage of the members must be guaranteed by means of collateral notes or producers' contracts. As will appear later in the discussion of patronage, producers' contracts have never been used by any of the creameries surveyed, and the patronage features of some of the collateral notes that have been used have definite limitations in this respect. However, after a creamery has demonstrated its ability to obtain and hold patronage on a competitive basis, it may obtain loans on the basis of its performance as a going concern.

FACTORS AFFECTING CHOICE OF FINANCING METHOD

The choice of a financing method is affected in all cases by local conditions. The intention of the organizers as to cooperative purpose is important. As has been indicated, producers sufficiently imbued with the cooperative idea will provide a basis for financing either in the form of cash or credit. If the producers are not sufficiently interested in a cooperative organization to provide adequate financing, a limited number of producers and others may assume the responsibility of promoting an organization. Those who contribute the necessary

capital, however, are likely to insist upon retaining control of the organization in their own hands. The stock form of organization may be well adapted to the purposes of such a group. This probably accounts for the fact that most of the farmers' creameries which are least cooperative are stock organizations.

The previous experience of a community with cooperatives also influences the choice of methods of financing. In one case a cooperative store and a cooperative elevator, both stock organizations, had operated with dubious results and their stock had become worthless. The sale of stock for financing another cooperative in this community was out of the question, so the certificate-loan and revolving-fund devices were used, with outstanding success. In another case a cooperative creamery association had failed twice and the mortgage was foreclosed by the local bank. The bank failed. In order to liquidate its assets, another cooperative creamery association was formed on a stock basis. Depositors were given the privilege of offsetting frozen deposits dollar for dollar with stock in the new creamery organization. The association is operating successfully. In other cases, methods that had proved successful in neighboring associations have been duplicated.

The financial condition of farmers may dictate the choice of a financing plan. It is not mere coincidence that all of the associations organized during the recent depression years, with the exception of the one noted in the preceding paragraph, were organized on a non-stock basis. Not only has money for investment in stock not been available, but associations with stock outstanding have been under pressure to repurchase their stock for cash. It has been possible, however, to obtain advances of capital where its repayment was provided for on a basis that contemplated its subsequent shift to active patrons, as provided for by the revolving-fund method.

Thus far consideration has been given mainly to the extent of financing by members and patrons. Since it usually is necessary for organizations to use funds other than those contributed or provided for by members and patrons, the extent to which other capital is used, the sources of such capital, and methods of obtaining it are important considerations. Many aspects of this question have already been discussed, but the question of present indebtedness deserves some further consideration.

PRESENT INDEBTEDNESS OF CREAMERIES

Although the average indebtedness of 77 associations as of December 31, 1934, was only \$2,225, or 6.4 percent of the average total assets, the average amount borrowed by 46 of these associations when they started operations was \$4,638, or 47 percent of their total assets. Of the 111 creameries surveyed, 38 started operations entirely with borrowed money.

Rate of Debt Reduction

Of the 44 creameries that were in debt at the time of the survey, all but 5 were reducing their indebtedness. The rate of reduction varied widely because of variations in volume of business, competitive conditions, and provisions for repayment. The relationship existing between volume of business and number of creameries in debt is indicated by the fact that, whereas 54 percent of the associations with a volume of less than 400,000 pounds of butterfat were in debt, only 24 percent of those handling over 400,000 pounds were in debt.

The form of organization may have an important bearing upon the provision for debt payment. Organizations that do not use the revolving-fund plan usually pay debts out of earnings, for which no evidence of proprietorship interest is issued to patrons. Their ability to pay debts is thus affected directly by the margin left after meeting competitive prices. Revolving-fund associations, on the other hand, provide for shifting the debt from original creditors to current patrons by specific deductions for which certificates of indebtedness are issued to patrons. The revolving-fund associations are thus able to make regular payments on debts while paying current competitive prices because part of the payment to patrons is made in the form of revolving-fund certificates.

Table 21 illustrates the advantage that revolving-fund associations may have in this respect over other types of associations. It will be noted that of 26 associations that do not use the revolving fund, only 4 reduced their debts at a rate exceeding 1 cent per pound of butterfat per year. Of 24 using the revolving fund, 13 or over half, exceeded the 1 cent rate of debt reduction. On the other hand, it will be noted that 2 revolving-fund associations were unable to make any payments on debt. This fact is a result of patrons' refusal to accept the revolving-fund certificates as part of the butterfat price, which further reflects their refusal to finance the association. Under these circumstances no source of funds to revolve the capital exists, and the revolving-fund plan is not operative.

TABLE 21.—RELATIONSHIP BETWEEN RATE OF DEBT REDUCTION AND TYPE OF ORGANIZATION

Annual rate of debt reduction (cents per pound of butterfat received)	Type of organization					
	Stock creameries		Mutual nonstock creameries		Revolving-fund creameries	
	Number	Percentage of total	Number	Percentage of total	Number	Percentage of total
None.....					2	8.3
0.1-0.5.....	7	43.7	6	60.0	4	16.6
0.6-1.0.....	7	43.7	2	20.0	5	21.0
1.1-1.5.....	2	12.6	1	10.0	6	25.0
1.6-2.0.....					2	8.3
2.1-2.5.....			1	10.0	3	12.5
2.6-3.0.....					2	8.3
Total.....	16	100.0	10	100.0	24	100.0

EXTENT TO WHICH OBLIGATION TO FINANCE IS EQUITABLY ENFORCED

The burden of the discussion of financing up to this point has had to do with the extent to which patrons have contributed capital and the methods by which these contributions were made. The question of the extent to which such contributions were made in response to the recognition or enforcement of obligations to finance and the extent to which the financial burden is equitably distributed among patrons, needs to be considered.

It has been pointed out that local conditions, the purpose of the organization, and other conditions may determine the type of organization; that is, stock or nonstock. Although the purpose of the organizers in some cases may not have contemplated that the financial burdens shall be borne equitably by the members and patrons, in practically all cases it appears that it was their purpose to operate a cooperative creamery for the benefit of producers who, it was hoped, would assume a fair share of the financial burdens. From this point of view, then, the method of financing adopted was fortunate or unfortunate depending upon its adaptability to the carrying out of the cooperative purpose.

Although other considerations and implications are involved, the classification of the creameries here as stock, revolving-fund, and mutual creameries, is largely on a financial basis. Each type of organization is discussed, therefore, from the point of view of the extent to which the financial method characteristic of the type contemplates and facilitates the equitable imposition of financial obligations upon members and patrons.

Stock Creameries

In a stock organization, contribution of capital is a condition of membership. Each member is required to subscribe for at least one share of stock, which must usually be paid for in cash or by a note. To this extent members are definitely obligated to contribute capital. However, after the stock has all been sold or after the necessary amount of capital has been accumulated, little, if any, additional stock is likely to be offered for sale. Moreover, it has also been shown that only 37 percent of the patrons of stock organizations are members. This fact suggests that although assuming financial obligation may be a requisite in order to become a member, it is not a requisite in order to patronize the organization or to participate in the benefits. Patrons thus either have no incentive to become members, or are unable to acquire stock except by transfer of shares from present members. But even such capital as the members supply is not likely to be contributed by them on a patronage basis. In the first place, each member usually voluntarily subscribes for as much stock as he chooses

or is able to finance. Subsequent shifts in the amount of patronage contributed by different members tend further to widen the disparity between the amount of capital and the amount of business contributed by individual members. A member may cease to patronize entirely and yet be unable or unwilling to change the amount of his capital contribution.

In some cases attempts had been made to equalize disparity in capital contributions and to impose upon all patrons at least some obligation to support the organization financially by assessing "manufacturing" or other charges against nonmembers, by paying patronage dividends only to members, or by a definite policy of at least partially revolving the capital. In some cases a fairly equitable distribution of the capital burden has thus been attained. Usually, however, no definite method is adopted, or any source of funds created by means of which an equitable distribution of capital might be brought about. Experience demonstrates that capital contributions in stock organizations tend to become "frozen", sometimes to such an extent that periodical reorganizations are necessary in order to bring about a reallocation of the capital burden, and to retain control of the organization in the hands of producers.

In one sense, stock organizations do impose a financial obligation upon all patrons through the accumulation of surplus funds and by deferring payments for butterfat. It has been shown that 36 percent of the assets of stock creameries was financed from accumulated surplus, and 20 percent from deferred payments. Since the product delivered by patrons is the source of such funds, it may be regarded as constituting patron contributions to financing the organization. Inasmuch as such contributions are not made voluntarily, they may be considered as obligatory. Furthermore, the contributions made in the form of deferred payments will bear equally upon all patrons on the basis of the volume of butterfat delivered. Additions to surplus, however, will bear most heavily, if not entirely, upon those who patronize during the time the association is liquidating debts or expanding its plant or facilities. Moreover, such contributions of capital accrue only to the stockholders and not to the patrons whose business made such accumulations possible.

The extent to which contributions are made in fulfillment of an obligation to finance depends upon the extent to which patronage itself is an obligation. It will be shown later that most creameries have no assurance of receiving patronage except as they can successfully compete for it. Patrons delivering butterfat to stock organizations that are in debt are, of course, aware of the fact that such debts will be paid largely out of earnings realized on the product delivered. If the producer decides that it is to his interest to patronize such an organization, he is required to contribute to the finances.

On the other hand, some stock organizations have lost volume during the period of debt payment. Producers have refused to assume the obligation to finance by refusing to patronize. Thus, whether or not such an organization succeeds in accumulating the necessary capital depends entirely upon its ability to meet competition. The mere retention of any part of the proceeds of the sale of products, whether in the form of earnings retained as surplus or otherwise, does not constitute making contributions of capital an obligation unless patronage itself is made a definite obligation.

Mutual Creameries

The mutual associations are, by definition, those whose members and patrons have no individually allocated property interest in assets. The original plan of organization did not even contemplate the exaction of a membership fee from patrons, although some creameries that have recently renewed their charters under cooperative laws have made some attempts to collect such fees. The fees are not an important source of capital.

In mutual associations, patrons' contributions to capital, other than those in the form of deferred payments, are represented entirely by surplus. For 12 associations, the surplus amounted to 64 percent of total capital. These associations were originally financed by collateral notes signed by producers to be used as security for loans from outside sources. Such notes usually provided that deductions from patrons' checks be applied on payment of the debt. They also contained clauses stating that if the signers ceased to patronize before the deduction had equaled the amount of the note, the unpaid balance was to be paid in cash. In some instances signers assumed joint liability for the full amount of the debt.

Where either collateral or joint notes were used, the signers definitely assumed the obligation to finance the association, at least until the original debt was paid. After the debt was paid and the notes canceled, financing again became a function of patronage.

From the point of view of the fairness with which the capital burden is borne by patrons, mutual creameries in some respects resemble stock organizations, but are dissimilar in other respects. At any given time, all patrons of the mutual creameries are on an equal basis insofar as obligation to finance is concerned. The inequities arising in stock organizations because of the presence of nonmembers, does not arise in mutual organizations, in which membership and patronage are synonymous.

Inequities, however, do arise in mutual creameries, mainly as a result of the passage of time. Those who were patrons at the time facilities were being acquired and paid for, contributed the entire capital on a patronage basis, which satisfied considerations of fairness as among the patrons of that time. But as time passed, the amount

of butterfat produced by individual patrons changed relatively, and in the course of time many of the original patrons ceased to patronize the creamery. This is likely to be a matter of considerable importance in a State like Iowa, where the dairy enterprise on diversified farms is subject to rapid expansion and contraction. Financial contributions of patrons are thus soon thrown out of proportion to patronage, and new patrons derive benefits on an equal basis with all other current patrons, but contribute nothing toward the financing of facilities. They may even assume no responsibility for maintaining the assets of the organization currently. In many cases plants financed by former patrons have been or are being liquidated by failure of the management to include depreciation as a deduction from current prices, as a result of which current patrons not only receive the market price for their butterfat but participate in the distribution of the capital accumulated by former patrons.

It is true, of course, that failure to include depreciation in costs will have the same effect under any form of organization, but since in mutual organizations no part of the proprietorship capital is represented by outstanding capital obligations, the creamery management is likely to take the attitude that no particular person's interest is adversely affected through such a dissipation of capital.

Were the accumulated capital represented by some form of negotiable security or proprietary interest, the liquidation of the interest of withdrawing members would make it necessary for current patrons to assume at least sufficient financial responsibility to provide funds for such liquidation. But since the original patron's capital contribution is not redeemable, he is in much the same position as the non-member patron who has contributed to the surplus of a stock organization, the only difference being that in mutual associations the contributions become the property of the community; whereas, in stock organizations they become the property of stockholders.

Revolving-Fund Organizations

In the case of nonstock, revolving-fund organizations, the responsibility of members for contributing original capital, is about the same as in stock organizations. Whereas, in stock organizations, the usual practice is to sell as much stock as possible, which usually means that a limited number of prospective patrons will become stockholders; in revolving-fund organizations, certificates of indebtedness are "sold" to as many prospective patrons as can be induced to buy them. An important difference, however, is that voting privileges are not associated with certificates of indebtedness as they are with shares of stock.

Thus, insofar as original financing is concerned, there is no more obligation to finance imposed upon members of a revolving-fund organization than upon those of a stock organization. To the extent

that membership fees are collected, and all patrons are required to be members, all patrons contribute equally; but membership fees, as such, have not been an important source of capital in revolving-fund organizations.

There is another important distinction between certificates of indebtedness and shares of stock. It is generally not contemplated that the share of stock shall be liquidated during the normal course of operation, but it is definitely expected that certificates of indebtedness shall be liquidated. The creation of a source of funds for liquidating them is an essential feature of the revolving-fund plan. Because a certificate of indebtedness is evidence of indebtedness, current patrons must assume the responsibility of maintaining the integrity of such obligations. To provide for the liquidation of such certificates, revolving-fund organizations make specific deductions per pound of butterfat received, the proceeds of such deductions being used first to liquidate ordinary loans, and then the certificates of indebtedness. But as such obligations are liquidated, new obligations are created by crediting current deductions (or issuing revolving-fund certificates or new certificates of indebtedness) to current patrons on a patronage basis. These new obligations must in turn be liquidated out of subsequent deductions, and so on throughout the life of the organization. By this process the capital is continuously revolving, hence the term "revolving fund" organization.

The patron of a creamery that revolves its capital by the process of assessing current patrons for that purpose knows that so long as he patronizes the association he will be forced to submit to such deductions. Here again, however, whether or not he assumes the obligation to finance (that is, submits to such deductions) depends upon his voluntary decision to patronize; and what his decision in this respect will be depends upon the ability of the association to meet competition. If it is unable to do so, the patron may cease to patronize. Whether or not the patron of a revolving-fund association contributes capital in the form of earnings accumulated by the association as surplus or through deferred payments depends upon his voluntary decision to continue to patronize the association.

The revolving-fund type of financing was evolved to overcome the inequities which appear to be inherent in other methods of financing. It accomplishes this purpose by providing for three things: (1) It makes financing obligatory upon all patrons; (2) it makes the contribution of capital directly proportional to patronage; and (3) depending upon the rapidity with which the capital is revolved, each patron's contribution is kept proportional to his patronage. Except for a certain amount of necessary lag, the capital contributed by those who cease to use the association will be paid out of contributions made by those who take their places.

It may appear that under this plan the association never gets out of debt. If the association succeeds in paying its debts, it does so in any case by withholding from patrons part of the proceeds of the sales of their products. From the point of view of equity, the association is under obligation to its patrons for amounts thus retained. Crediting patrons with such retention of proceeds merely gives recognition to such obligations on an equitable basis.

The revolving-fund method of financing, however, is subject to a number of abuses. The funds derived from deductions may be dissipated in current prices rather than used to shift the financial burden to current patrons. If this is done while the association is still in debt to outsiders, the entire responsibility of patrons to finance may be evaded. If it is done after patrons have assumed financial burdens, the plan is subject to the criticism that contributions become "frozen" as in stock and mutual associations. It is also possible to reduce the amount of the revolving fund relative to total capital required, by building up a surplus. If the surplus in a revolving-fund association is permitted to become a relatively important source of capital, it is likely to be subject to the same criticism as excessive surpluses in stock or mutual companies.

SOME RESULTS OF INEQUITABLE METHODS OF FINANCING

Inequitable methods of distributing the financial burden, aside from violating cooperative principles, tend to introduce conflicts of interest and to destroy the unity of purpose so essential for success in a cooperative organization. It may be argued that inequities resulting from accumulation of surplus to which patrons have no definite claim, are unimportant from the point of view either of practical operations or equity itself. The accumulation of, say, \$20,000, of surplus over a period of 20 years, on the basis of a volume of 500,000 pounds of butterfat handled annually, amounts to only \$1,000 per year, or 0.2 cent per pound of butterfat. Yet, accumulated surplus has become a bone of contention over which associations have been wrecked. The question "Who owns the creamery?" is important when some patrons have a definite claim to ownership and others do not. The patronage of one association declined from over 500,000 pounds of butterfat to 100,000 pounds in 6 years, because of dissension among patrons over the rights of stockholders. In another association, nonstockholding patrons forced a reorganization which would give them an interest in a building fund to which they were contributing.

It is not to be inferred from the foregoing that the mere presence of a surplus in a cooperative organization is detrimental or contrary to sound cooperative financing principles. A distinction must be drawn though, between depending upon surplus as a means of financing the organization, and the creation of a reasonable surplus as a protec-

tion against contingencies. Inequities result only if unallocated surpluses are accumulated greatly in excess of such requirements.

Organizations whose members refuse to finance the organization by other means, or to assume the risks incident to the operations of the business, are forced to withhold from patrons a sufficiently wide margin to provide not only operating capital but a reserve for protection against losses. Even in such cases, the practice may be justified as a matter of practical expediency, provided the patrons out of whose product the surplus was created are given an interest in it. A pertinent question, however, may be raised as to whether a cooperative organization should be launched until a sufficient number of producers are willing to assume the necessary financial obligations.

Inequities resulting from faulty plans of financing are of more than academic interest. That the plan of financing adopted by a cooperative organization must be consistent with cooperative principles has been demonstrated time and again to be of the highest practical importance. Inequities such as those referred to, pave the way for the development of conflicts of interest which if they do not wreck the organization, militate against its achieving the highest success. It is obviously impossible under practical operating conditions to avoid all inequities. But all means should be exhausted to avoid significant financial inequities, because they are particularly apt to breed dissension.

EFFECT OF METHOD OF FINANCING UPON MAINTENANCE OF PATRON CONTROL

A brief summary will be presented here from the point of view of maintaining control in the hands of active patrons under stock and nonstock methods of financing.

The methods of financing characteristic of nonstock organizations are such that they not only facilitate making members of patrons, but also facilitate terminating the membership of those who become ineligible. Hence, membership in these organizations is to a large extent synonymous with patronage. Likewise, financial obligations are closely associated with patronage. In the revolving-fund organizations, active participation of patrons in the affairs of the association usually terminates when they cease to patronize, and in the course of time their financial contributions are returned to them through the operation of the revolving fund. Likewise, in the mutual association, active participation is also denied those who cease to patronize, and there is no obligation on the part of the association to return to retiring members any part of the association's capital. Thus, it may be concluded that in nonstock organizations as a group, the financial relationship does not act as a deterrent either to the acquisition or termination of membership, and the methods of financing character-

istic of these organizations do facilitate keeping membership closely identified with patronage.

This and other similar studies make it clearly apparent that if control of the association is to be retained by active patrons, it must be divorced from capital contribution, but in such a manner as will not invalidate the patron's obligation to finance. This may be accomplished by organizations using stock as a basis of membership, but it is exceedingly difficult to do so where the sale of common stock is also an important source of capital.

Under the 1935 Iowa cooperative law, membership in stock associations depends upon the holding of one share of voting stock, no more. The method of financing adopted is left to the discretion of the association, but where capital is accumulated out of earnings or by means of specific deductions based on products handled, the amount withheld from each patron must be credited to him, except for a limited portion of earnings which is required to be reserved as free surplus. But even such surplus must be distributed on a patronage basis in case of dissolution of the association. Termination of a membership thus involves the retirement of but one share of stock, and the remainder of the member's financial equity is definitely fixed and will be liquidated during the subsequent operations of the revolving fund. The principles involved in this procedure have been effectuated by the operations of many revolving-fund creameries operating under the nonstock law of 1921.

Reference has from time to time been made to questions of volume of business and patronage. Because of the effect of volume of business on manufacturing costs and on the rate of capital accumulation, the patronage relationship is of primary importance. This subject is discussed on the following pages.

THE PATRONAGE RELATIONSHIP IN IOWA COOPERATIVE CREAMERIES

A COOPERATIVE organization must be assured of receiving a volume of business large enough to enable it to carry out its purpose. The purpose of Iowa cooperative creameries has been to improve the local market in which the producer sells his butterfat. In every case this purpose was to be accomplished by operating a cooperative creamery which would set the standard of competition and operating efficiency. Hence, the volume necessary to carry out such purposes must be sufficient to enable the creamery to operate successfully under existing competitive conditions.

The fact that the competitive situation varies in different communities at once suggests that the volume necessary to enable a cooperative creamery to operate will likewise vary by communities. Any change in the competitive situation in a given community may

require different volumes at different times; and, if the purpose of the organization should change, it might be necessary to change the volume handled. For instance, if the purpose should shift from correcting the local competitive situation to minimizing the cost of manufacturing or the cost of assembling butterfat, or to effecting merchandising economies, the volume needed might become very different. Whatever the purpose of the organization, the basis upon which it is contemplated that the organization will obtain the necessary volume constitutes one of the essential member relationships. The question becomes, by what means or methods does the organization procure its volume of business, and how consistent are these with the cooperative purpose of the enterprise?

It is essential that a cooperative organization be assured of receiving the patronage of its members. If the members fail to provide whatever volume may be necessary to carry out the purpose they had in organizing the cooperative, to that extent they defeat their own purpose. This simply means that if the members are to derive benefits from the organization they must assume the obligation to provide patronage necessary to a realization of the benefits. The greater the extent to which the organization is forced to cater to nonmembers in order to obtain its volume of business, the greater the extent to which it jeopardizes its chances of developing an efficient operating unit and is forced to incur the usual expenses for solicitation, with the result that anticipated savings may not materialize. Moreover, it is practically impossible to maintain the interest of both members and nonmembers on a strictly mutual basis. This opens the way for inequities, conflicts of interest, and exploitation of one group by another.

In extreme cases, the managements of organizations that must resort to the handling of nonmember business in order to survive, acquire a self-consciousness that tends to set them apart from their members and patrons. Perpetuating the organization may become a matter of greater concern to the management than serving the interests of producers. When this point is reached, the organization is likely to become "just another dealer" dependent for survival upon its own initiative and interest, rather than upon that of its members. The development of such a management self-consciousness within an organization is usually merely a matter of time, where members fail to provide the necessary volume of business.

COOPERATIVE LOYALTY IN THE EARLY DAYS

In the days of dirt roads and wagon transportation, when the creameries' activities were limited to the local community and the competitors were mostly local private creameries and cream stations, the cooperative creamery was fairly well assured of receiving a volume of business sufficient to enable it to operate in the local community.

Several factors contributed to such assurance. First, the early cooperative creamery represented a protest against prevailing practices among private creameries and cream stations. Second, producers felt that the cooperative creamery was needed to assure them of receiving the full value of their product, less the actual cost of manufacturing and marketing, and that by supporting such an enterprise they would receive the middleman's profit. The cooperative creamery meant to them emancipation from what was regarded as an unsatisfactory system of marketing. Farm organizations and agricultural leaders took up the cause, meetings were held, and enthusiasm was at a high pitch. The volume of business attracted as a result of a keen appreciation of the need of a cooperative creamery, gave the cooperative a third advantage in the form of lower manufacturing cost.

Thus, not only did the producers feel obligated to patronize the cooperative creamery, but they were able to measure readily the financial advantage to be gained by doing so. Moreover, the practice of financing by collateral notes tended further to strengthen the sense of obligation on the part of members and patrons to patronize the creamery.

Under the foregoing circumstances the cooperative creamery did not need to be any more efficient than the private creamery in order to attract business. It might have been even less efficient and still have held its competitive advantage, purely because producers felt it to be a necessary safeguard in the local market. The efficient cooperative might conceivably, of course, force the private operator to forego all profit and even to go out of business; but the private operator competing with an inefficient cooperative creamery, realizing that he might have difficulty in forcing the cooperative out of business, might find it distinctly to his advantage merely to meet the price paid by the inefficient cooperative.

CURRENT COMPETITION AMONG COOPERATIVE CREAMERIES

The competitive situation has undergone radical changes, particularly since transportation by truck has become a factor.⁷ Competition is no longer on a local basis or with private creameries alone. A cooperative today must match the results of the most efficient of a number of cooperative creameries with which it competes. Hence, appeals to loyalty based on the advantages of cooperative over private creameries are much less effective. The basis on which the present-day cooperative creamery assures itself of receiving a sufficient volume of business to enable it to operate successfully is more definitely a basis of relative efficiency.

⁷ Between 1924 and 1934 the mileage of hard-surfaced roads in the primary and county trunk systems increased from 4,727 to 16,510 miles, while dirt roads decreased from 12,112 to 4,789 miles. A phenomenal development of truck transportation of farm products accompanied the road improvement. See: State of Iowa. REPORT OF THE STATE HIGHWAY COMMISSION FOR THE YEAR ENDING DEC. 3, 1934. 150 pp. 1936.

Although it was apparent in the course of the study that some farmers had committed themselves to patronizing their local cooperative creamery to the exclusion of other alternatives, in most cases the creameries were assured of volume only to the extent that the price they paid was equal to or higher than that paid by competitors.

In extreme cases, because of personal pride in the organization, patrons apparently continued to be loyal even though the creamery operated at a distinct competitive disadvantage. In other cases, fear that the price would drop if the cooperative ceased operations provided sufficient volume to keep the creamery going. Trading habits of farmers also appeared to be a factor; farmers tend to deliver their products where they are accustomed to do their general trading. In still other cases the fact that members had a capital investment in the plant probably was a factor of some importance, where, because of failure to deduct depreciation or to maintain the physical facilities, the invested capital was gradually being dissipated. In such cases, however, the effect is to raise the price paid. Fear was expressed in a number of cases that when the present plant was worn out, farmers would probably refuse to replace it.

Years of association with an organization also undoubtedly exert some influence, particularly on farmers long established in the community. Hence, in communities where the turn-over of farmers is relatively high, especially where tenancy is prevalent, the price paid is more likely to be the chief consideration.

Perhaps the strongest indication of the extent to which competitive strength is relied upon to attract patronage is the effort made by the creameries to pay a high price. This certainly is a legitimate and worthy objective. Farmers are seldom justified in maintaining a cooperative organization unless it be to their financial interest to do so. They should, however, be certain that they are not taking a short-time or narrow point of view regarding the situation. This may be difficult for them to determine because of the competitive devices frequently employed, not only by private operators but also by cooperatives.

Considerable difference of opinion exists as to whether or not competition among cooperative creameries is consistent with sound cooperative philosophy. Organizations that are in a strong competitive position are inclined to hold to the view that producers are entitled to all that can be had for them; whereas, those less favorably situated are likely to question the motives of a cooperative creamery that uses its competitive strength to make it difficult for another to survive. To the extent that cooperatives resort to wasteful and unethical methods of competition, the complaint is surely justified; but to the extent that relative efficiency is the basis for such competition, the objection is untenable on economic grounds.

Legitimate Bases of Competition Among Cooperatives

Farmers organized cooperatives in order to eliminate unnecessary costs, wastes, and abuses which they complained of as associated with private competitive business. When cooperatives cease to be motivated by such a purpose, they cease to that extent to represent the producers' interest. Obviously some cooperatives are more aggressive and militant than others in promoting producers' interests. In the course of time some may change their purpose to such an extent that they can no longer be regarded as producer motivated. Moreover, different organizations may adopt different methods of attaining the same objective, and it is only by experimentation that the most effective methods are discovered. Is it in the interest of producers that the less aggressive organizations or the less effective methods, even among cooperatives, be perpetuated; and should farmers be denied the benefits of improvements in transportation, manufacturing, and marketing processes because a given organization is unable or unwilling to adapt itself to such changes?

To insist that competition among cooperatives is inconsistent with cooperative theory is to deny that the purpose of a cooperative is to promote the interest of its members. Farmers interested in maximizing their farm profits will resort to cooperation only as they can thereby increase such profits. The members of a cooperative will insist that their organization aggressively promote their interest. Each of a group of organizations thus motivated will continue to add volume, improve the quality of the product, exploit sales opportunities, and increase operating efficiency to the point where no further gains result. Maximizing net returns to producers must be the ultimate economic goal.

In the course of time, if conditions should remain constant, there would finally emerge a group of cooperatives in the industry each of which would be maximizing the returns to its members. At this point the sum total of returns to all producers in the industry would be at the maximum. Moreover, the competitive pressure exerted by competing organizations upon each other would be equal. The fact that some creameries are exerting unequal competitive pressure upon others indicates that the goal of highest efficiency has not yet been reached in the industry. The point of highest efficiency is itself constantly shifting, because new factors are continually disturbing the situation, as a result of which a perfect adjustment is impossible at a given time. The process of adjustment is continuous.

Nevertheless, it is only by making the most enlightened effort possible to ascertain at least approximately the point at which a given organization should cease to strive for more volume, higher quality or increased sales efficiency, that anything like a rational basis of competition among cooperatives can be established. The first essential is to discover what is in the best interest of producers. This necessitates

discovery of the factors affecting net returns and the nature of such effect.

Factors Affecting Net Returns

That a definite relationship exists between volume and cost of manufacturing is generally recognized. Likewise, current market quotations indicate that in general, higher prices are paid for high-quality butter than for low-quality butter. That a relationship exists between volume of uniform products and prices is also recognized; and that operating efficiency and adjustment of capacity of plants to volume affects costs of manufacturing is almost trite. Not enough information, however, is available regarding the nature of costs of transportation and of assembling butterfat; and practically nothing is known about how all of these factors react upon each other and how the best balance among them may be attained.

The question might be raised at this point as to what all this has to do with the problem of patronage. On the basis of the foregoing analysis, the organization's problem of assuring itself of receiving the patronage of its members resolves itself into the problem of ascertaining what is in their best interest, the assumption being that the organization is justified in asking for the loyal support of its members only if it is functioning in their best interest.

The question of the best interests of producers resolves itself into a problem of maximizing the net returns to producers; that is, maximizing the sales value of the product, and minimizing the combined cost of assembling and processing the butterfat and distributing the finished product. Enough information was obtained regarding some of these factors to indicate their nature and importance and the situation that exists among the creameries with reference to them. The first to be discussed is volume of business.

Relationship Between Volume Handled and Costs

Distribution of 279 cooperative creameries in operation in 1933 on the basis of the volume of butterfat handled in that year is shown in table 22.

For the State as a whole, two important facts stand out. First, there is a high concentration of creamery numbers in the small-volume groups. Seventy-four percent of the creameries handled less than 400,000 pounds of butterfat in 1933. Over 90 percent of them handled less than 700,000 pounds of butterfat. The significance of these figures will be pointed out later. Second, there is a wide range in volume handled by individual creameries—from 50,000 to 2,500,000 pounds.

The relationship between volume of product handled and cost of operation has long been recognized by creamery operators. Although no intensive analysis of cost was made in connection with this study, figures for 1934 were obtained from 65 creameries that kept cost accounts on a comparable basis, using the Iowa State College system

of accounting.² Figure 6 shows the relationship of cost of operation per pound of butterfat to volume of butterfat handled for these creameries. Although it is not possible on the basis of these figures to predict cost accurately from volume, a distinct relationship is revealed. The highest costs appear among creameries receiving less than 250,000 pounds of butterfat per year. The lowest cost was for a creamery having almost 2¼ million pounds of butterfat, or 2¼ million pounds of butter. The difference between highest and lowest cost is almost 4 cents per pound of butterfat. It appears that the curve of decreasing cost tends to flatten out after a volume of 750,000 pounds of butterfat is reached.

TABLE 22.—DISTRIBUTION OF 279 IOWA COOPERATIVE CREAMERIES BY GEOGRAPHIC DIVISIONS, ON THE BASIS OF THE VOLUME OF BUTTERFAT RECEIVED IN 1933¹

Butterfat received (1,000 pounds)	Number of creameries, by State divisions				Percentage of creameries, by State divisions			
	North-eastern	Central and north-western	Southern	Total	North-eastern	Central and north-western	Southern	Total
Less than 100.....	21	6	.....	27	10.7	18.2	.....	10.4
100-199.....	52	8	4	74	30.1	18.2	13.8	29.5
200-299.....	52	9	4	65	25.2	20.5	13.8	29.8
300-399.....	23	11	5	39	11.2	25.0	17.2	14.0
400-499.....	17	2	2	21	8.3	4.5	0.9	7.5
500-599.....	5	2	4	11	2.4	4.5	13.8	3.0
600-699.....	9	1	2	12	4.4	2.3	10.3	4.7
700-799.....	5	.....	1	6	2.4	.....	3.4	2.3
800-899.....	2	1	.....	3	1.0	2.3	.....	1.1
900-999.....	3	1	.....	4	1.5	2.3	.....	1.4
1,000-1,099.....	2	.....	2	4	1.0	.....	6.9	1.4
1,100-1,199.....	.....	.....	.....	.....	.....	.....	.....	.....
1,200-1,299.....	.....	.....	.....	.....	.....	.....	.....	.....
1,300-1,399.....	.....	.....	2	2	.....	.....	6.9	.7
1,400-1,499.....	.....	.....	1	1	.....	.....	3.4	.4
1,500-1,599.....	1	.....	.....	1	.5	.....	.....	.4
1,600-1,699.....	.....	.....	.....	.....	.....	.....	.....	.....
1,700-1,799.....	2	.....	.....	2	1.0	.....	.....	.7
1,800-1,899.....	.....	.....	.....	.....	.....	.....	.....	.....
1,900-1,999.....	.....	.....	.....	.....	.....	.....	.....	.....
2,000-2,099.....	1	.....	.....	1	.5	.....	.....	.4
2,100-2,199.....	.....	.....	.....	.....	.....	.....	.....	.....
2,200-2,299.....	1	.....	1	2	.5	.....	3.4	.7
2,300-2,399.....	.....	.....	.....	.....	.....	.....	.....	.....
2,400-2,499.....	.....	1	.....	1	.....	2.3	.....	.4
Total.....	206	44	29	279	100.0	100.0	100.0	100.0

¹ As here tabulated, the northeastern section includes the 33 counties bounded on the west by the column of counties from Winnebago to Story and on the south from Story to Scott, including Cedar and Scott.

The northwestern section includes the 24 counties lying west of the Winnebago-Story column and north of the 4 southern tiers of counties.

The southern section includes the 42 counties in the 4 southern tiers—from Harrison to Muscatine counties.

It is significant that almost 90 percent of the creameries were operating with less than 700,000 pounds of butterfat per year. It appears that it would be to the interest of a large number of Iowa producers to have much of the butterfat now handled by the smaller creameries processed by larger units.

² Mighell, A., and Quintus, P. E. FINANCIAL MANAGEMENT OF FARMERS' CREAMERIES AS AFFECTED BY VOLUME AND PRICES. IOWA Agr. Expt. Sta. Bull. 351, 40 pp., illus. 1926.

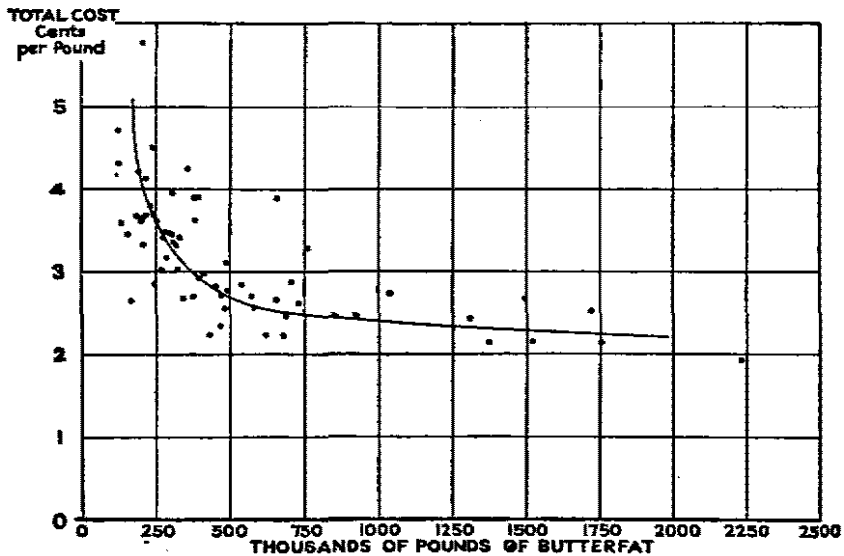


FIGURE 6.—RELATIONSHIP BETWEEN OPERATING COST PER POUND OF BUTTERFAT AND VOLUME HANDLED.

Although it is not possible to predict cost accurately on the basis of volume, a definite relationship is revealed.

Relationship Between Volume Handled and Selling Price

It is generally held that a selling advantage accrues to organizations that have a large volume of uniform product. However, many small-volume creameries sell a relatively large proportion of their output in local markets and to their own patrons at relatively higher prices than are received for butter shipped to distant markets. Some small-volume creameries sell through sales agencies that provide standardization and quality service as well as sales service; a procedure which tends to overcome the disadvantage small creameries may have in the marketing of their product.

Efforts to improve quality of product, efficiency of plant operations, and merchandising of the product, all aim at increasing the price the creamery can pay for cream delivered at the plant. A consideration of prime importance to the farmer, however, is the price he receives net at the farm. The difference between the price of butterfat delivered at the plant and the net farm price is the very important item of transportation cost. The present study has served merely to emphasize the importance of some aspects of this problem and to direct attention to the need of making an exhaustive study of the subject.

Some aspects of the problems that affect competitive and patronage relationships of creameries will be discussed here.

Transportation Costs and Rates

An outstanding fact regarding methods of transportation is the large extent to which butterfat is assembled by means of motor-trucks. Table 23 shows the distribution of 106 creameries on the basis of the proportion of total butterfat which is received by truck routes. For the State as a whole 68 percent of all butterfat received was assembled by truck. About two-thirds of the creameries received 50 percent or more by this method, with a high concentration of creameries occurring in the 91- to 100-percent class. A large part of the creameries receiving less than 50 percent of their butterfat by truck are in northeastern, central, and northwestern Iowa where community creameries and producer deliveries still prevail. In southern Iowa, on the other hand, almost half of the creameries receive over 90 percent of their butterfat by truck route. Special equipment adapted to the requirements of the area has been developed for this purpose (fig. 7).

Since so large a proportion of the total butterfat is transported by truck, the cost of which directly reduces the farmers' net returns, any factor that affects this cost is of primary importance.

Cost of hauling.—The actual cost of hauling in terms of trucking expense per pound of butterfat was available only in instances in which creameries owned their trucks and kept separate cost records. For the associations which hired their hauling done, the rate per pound of butterfat paid to the hauler is the only cost figure available.

The rates paid hired haulers range between 1 and 3 cents per pound of butterfat with 38 creameries paying 2 cents, 31 paying 2.5 cents, only 7 paying less than 2 cents, and 10 paying over 2.5 cents.

TABLE 23.—DISTRIBUTION OF 106 COOPERATIVE CREAMERIES ON THE BASIS OF PROPORTION OF TOTAL BUTTERFAT RECEIVED FROM TRUCK ROUTES

Percentage of total butterfat received from truck routes	Number of creameries in—			
	Northeastern Iowa	Central and northwestern Iowa	Southern Iowa	Total
10 or less.....	2	3	1	6
11-20.....	1	6	1	8
21-30.....		2		2
31-40.....	2	5	1	8
41-50.....	1	6	3	10
51-60.....	1	3	2	7
61-70.....	4	3	1	8
71-80.....	7	2	2	11
81-90.....	5	3	5	13
91-100.....	10	9	14	33
Total.....	33	42	31	106
Average percentage.....	Percent 74	Percent 56	Percent 79	Percent 68

Ownership of trucks.—The large concentration of hauling rates around 2 and 2.5 cents suggests that the rates paid are, to a large extent, established by custom, and therefore may show little relationship to actual cost. For the associations owning trucks, however,



FIGURE 7.—CREAMERY AND CREAM ROUTE TRUCKS OF BROOKLYN COOPERATIVE CREAMERY ASSOCIATION, BROOKLYN, IOWA.

Insulated truck bodies are provided for the protection of the cream against deterioration in transit.

accounting records showed the actual cost of hauling. The net cost for the creamery-operated trucks in every case was 1.5 cents per pound of butterfat or less. Only 4 of 95 creameries that did not operate their own trucks had hauling rates as low as 1.5 cents per pound of butterfat. The associations included in this survey that operated their own trucks were located in widely scattered areas of the State and appeared to be operating under conditions that only to a slight extent favored low hauling costs.

Two distinct sources of savings are possible through operation of trucks by creameries. One possibility is to reduce the expenses of operating the trucks themselves. No conclusions can be drawn on the basis of the survey data as to whether associations or private truckers can operate at less expense. Factors to be considered in this connection include savings on volume purchases of gasoline, tires, and other supplies; centralized garage and mechanical service; and efficient utilization of haulers' time and service of trucks. Such economies are most apt to be effected when several trucks are operated and the volume is large enough to make possible division of functions and labor.

The second and more important aspect of truck ownership is the opportunity and incentive it affords the association to control the hauling and organize its territory for efficient transportation. Reorganization of routes to give every truck as nearly as possible a maximum load may reduce unit costs of hauling, whether or not costs of operating the individual trucks are reduced. Some associations have found that they can obtain lowest rates by controlling the organization of routes and contracting by bid for the operation of those routes on an annual basis. Other small associations after they reorganized their areas under truck ownership sold the trucks to private operators but continued to control the rates.

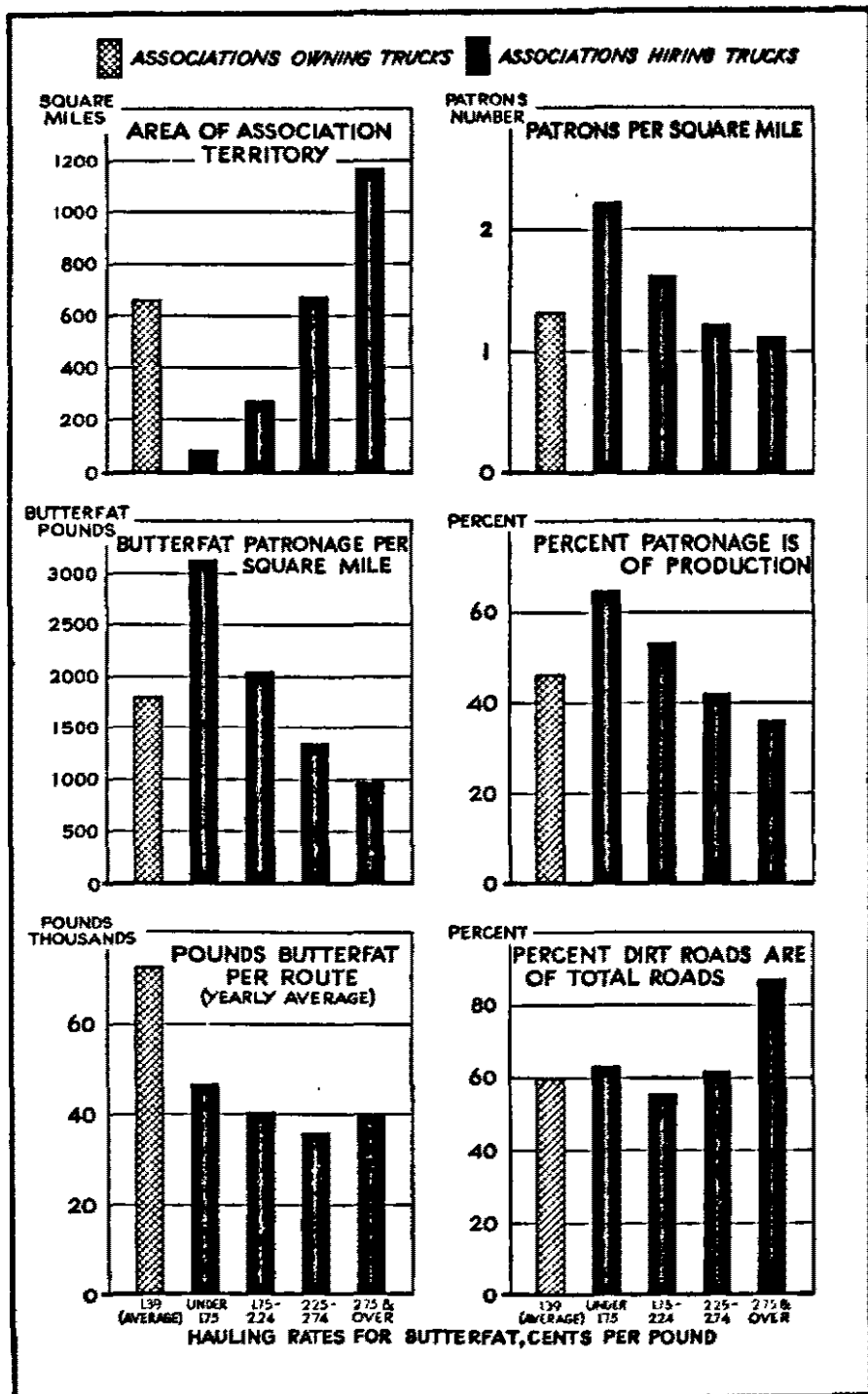


FIGURE 8.—PRINCIPAL FACTORS ASSOCIATED WITH VARIATIONS IN HAULING RATES FOR IOWA CREAMERIES.

Associations owning trucks have a material advantage in pounds of butterfat hauled per route.

Development of patron loyalty to the association rather than to the individual truck driver is an advantage of ownership, aside from money economy. The use of drivers as fieldmen for the association is an important means of producer education. It may be that making salaried employees of drivers will not entirely eliminate the possibility of patrons' loyalty being diverted to the driver rather than to the association. However, if the association cannot prevent this diversion while the drivers are on its pay roll, it is certain that it could not do so were they working independently.

In some associations, the butter maker, manager, secretary, or directors have personal interest in the cream routes, either through ownership of the trucks or through employment of friends or relatives. This may be a factor determining the extent to which efforts are likely to be made to minimize hauling costs.

The chief factors that were found to be associated with variations in hauling rates are shown in table 24 and figure 8.

Butterfat hauled per route.—One of the advantages of association truck ownership was stated to be more economical organization of routes to give every truck a capacity load, thereby reducing the number of trucks necessary to haul a given volume of butterfat. The data shown in table 24 reveal a definite tendency for hauling charges to decrease as size of load hauled increases. In this respect the experience of the associations that operate trucks is particularly noteworthy. A significant fact is that these associations have definitely increased the load per route as a means of reducing costs.

Condition of roads.—A physical factor affecting hauling rates largely beyond the control of the association is the condition of the roads in the territory. It would be expected that other things being equal, the higher the percentage of dirt roads, the higher would be the cost of transportation. While a definite tendency exists for expenses to be higher in a dirt-road territory, it is not so pronounced as might be expected (table 24). Deviations from the tendency are wide, high rates in some cases being paid in good-road areas, and vice versa. This fact supports a statement previously made that hauling rates tend to be determined by custom or bargaining power, rather than by actual cost.

Size of trade area.—Much has been said concerning the desirability from certain standpoints of concentrating the creamery's business within the smallest possible area. One of the important reasons is that thereby the cost of assembling butterfat may be reduced to the minimum. In columns 3 to 6 of table 24, hauling rates are related to four measures of patronage concentration; namely, butterfat received per square mile of territory, number of patrons per square mile, size of trade area, and proportion of the production of the trade area received by the creamery. Results consistently demonstrate the advantage of concentrating patronage into the smallest possible area.

TABLE 24.—RELATIONSHIP BETWEEN HAULING RATES AND PRINCIPAL FACTORS AFFECTING TRANSPORTATION COSTS

Hauling rate (cents per pound of butterfat)	Associa- tions	Square miles trade area	Patrons per square mile of trade area	Pounds butterfat received per square mile of trade area	Percentage of produc- tion of area received by cream- ery	Average pounds butterfat hauled per route, per year	Dirt roads as a per- centage of total roads in trade area
Associations hiring trucks:							
Less than 1.75.....	5	83	2.2	3,139	64.6	46,728	48.2
1.75-2.24.....	37	271	1.6	2,048	62.0	40,454	51.5
2.25-2.74.....	44	670	1.2	1,346	42.0	34,834	62.0
2.75 or more.....	6	1,164	1.1	977	34.0	30,963	67.0
Associations owning trucks:							
1.29 ¹	9	661	1.3	1,801	46.0	72,700	60.0

¹ Average for 8 creameries for which hauling costs were available. All other figures are averages for 9 creameries that operated 1 or more owned trucks.

Methods of Determining and Assessing Hauling Rates

The methods used in determining hauling rates and assessing them against patrons vitally affect the equity with which the hauling cost is borne by different patrons, the size of the trade area, and the competitive aspects of the creamery's business. Expediency dictated by the creamery's dependence upon competitive methods in order to assure itself of patronage, to a large extent determines the choice of method.

Three distinct bases for arriving at hauling charges were found to be used by Iowa creameries:

1. Direct negotiation by patrons with haulers.
2. Negotiation between the creamery and haulers.
3. Actual cost of hauling.

The first method is more generally prevalent in northeastern Iowa than elsewhere in the State; the second method is used most in the southern part. The third method is characteristic of only a limited number of creameries that own and operate trucks.

The differences in methods used in different areas are partly the result of custom and partly of local conditions. In northeastern Iowa, individual delivery prevailed from the beginning; it was up to the patron to deliver his own cream, exchange hauling services with neighbors, or organize a cream route operated by a hired hauler. The rate paid for hauling in the latter case was decided by the patrons and the haulers directly. Such rates are likely to be higher than actual costs of hauling because of the bargaining power of haulers and because patrons do not know what the actual costs are.

In southern Iowa, the more general practice is to establish rates by negotiation between the creamery and the haulers. In this area cooperatives were not organized until truck transportation had made local creamery operation practicable. A creamery in this area was dependent upon truck haulers for volume, first, because individual patrons would not deliver cream long distances, and second, because

patrons would not assume the obligation to patronize. Haulers thus became not only transportation agencies, but solicitors of volume for the creamery. The creamery, therefore, engaged the haulers, which involved establishing the hauling rates. Rates under such circumstances are likely to be relatively high, because a creamery seeking to expand its volume of business is likely to offer more liberal inducements to haulers than are patrons negotiating directly with haulers. Moreover, the hauling rate in such cases includes a certain amount of cost incurred for solicitation and procurement of volume rather than for transportation only. Also, the longer distances cream is hauled in southern Iowa, the usual condition of the roads, density of production, and other factors, undoubtedly contribute to the higher rates paid in that area. Situations similar to those described, however, prevail in scattered areas and local communities in other parts of the State.

The actual cost of transportation is used as a basis for determining rates only if a creamery operates one or more trucks. The nine organizations that were using this basis in 1935 were scattered throughout a narrow belt extending roughly from Dubuque County to Sioux County. The specific circumstances that led to ownership and operation of trucks in these cases were not ascertained. An important factor, however, undoubtedly was an appreciation on the part of the creamery management of the importance of economizing on transportation as a means of increasing farmers' returns.

As stated above, it is apparent that lack of knowledge of transportation costs on the part of a large majority of the creameries as well as on the part of the patrons themselves, is an important factor contributing to high rates. Out of 106 associations, 68 failed to show on the patron's statement the exact amount paid for hauling. In these cases, either all or a part of the hauling cost is included with the other expenses and deducted in calculating the price paid to patrons. Under such circumstances, patrons are in no position to adopt an enlightened course of action with a view to reducing transportation costs.

In view of the importance of transportation cost as a factor affecting the farmer's net returns, cooperatives that are presumed to be promoting the patron's best interests can take little comfort in the fact that they may have had nothing to do with the negotiation of the rate. The best interest of patrons demands that the cooperative consider transportation and assembling cost as well as operating cost, and that the volume be so adjusted as to minimize the combined cost of manufacturing and assembling.

The emphasis placed on the price paid for butterfat as a means of attracting and holding patronage has merit to the extent that it results in stimulating legitimate efforts to maximize the farmer's net returns for their butterfat. Such efforts include attempts: (1)

To increase the market value of finished products; (2) to reduce manufacturing costs; and (3) to reduce costs of procuring and assembling raw materials. Variations in prices paid patrons for butterfat that result from variations in the effectiveness of attempts made in these three directions may be regarded as providing a legitimate basis of competition not only among cooperatives but among other types of organizations.

Illegitimate Competitive Practices

Competition is not always limited to the foregoing legitimate basis. Lack of adequate records, resulting in overpayments being made without the knowledge of the management, is a fruitful source of destructive competition. In some cases, however, deliberate overpayments occur with the knowledge that thereby the capital of the organization is being dissipated. Another form of strategy is arbitrarily to manipulate prices paid seasonally in order to meet or provide competition during seasons of low production. Another form of the same sort of strategy is to offer price inducements around March 1, when new farmers who have moved into the community are establishing trade contacts.

Unfortunately, creameries that are driven to competitive extremities may even resort to illegal practices. Manipulations of weight, tests and overrun may be resorted to in order to overstate the price. A variant of this practice is to manipulate weights and tests so as to favor patrons in highly competitive sections of the trade area, to the disadvantage of patrons in less competitive areas. Prosecutions of creameries by the State because of violations of State laws making such practices a misdemeanor, indicate that such practices exist.

Another practice, recently brought under the jurisdiction of the law, is to manipulate the grade of butterfat purchased. Prior to the enactment of this law, most creameries did not pay for cream on a graded basis, because to do so would have placed them at a competitive disadvantage with creameries that would "take anything at the same price." The feeling prevailed that the creameries which did pay according to grade, graded more leniently in highly competitive areas.

Even the quality-improvement program, meritorious as it is as a means of increasing farmers' returns through increasing consumption and prices, has its competitive aspects. In response to pressure to make the cooperative price high in comparison with that of competitors, cooperatives early adopted the practice of rejecting low-grade cream. Although this practice has merit in that it forces producers to improve quality if they wish to use the cooperative's facilities, and enables the creamery practicing it to pay a higher price, it tends to insure to competitors a volume of cream of the quality that they have been accustomed to receive. Thus, by their own

competitive policies, cooperatives help to maintain their competitors in business. Although this practice may serve the best interests of some patrons, a question may be raised as to whether a creamery might not best serve the interests of all producers by assembling all fat and disposing of each grade in the most advantageous manner.

Whether or not some of the practices mentioned are right or wrong from the point of view of expediency is beside the point. The extent to which they are consistent with sound economic principles and cooperative purposes is the only basis on which their legitimacy may be judged. Any organization that follows policies or indulges in practices that tend to confuse farmers rather than to enlighten them as to their best interest has lost its cooperative direction and purpose to such an extent that it no longer merits their support.

Thus far in this discussion stress has been laid upon the patronage relationship existing between the creamery and its members and patrons, and the effect of such relationship upon the competitive relationship existing among the cooperatives. The patronage relationship is of fundamental importance, because it largely determines the extent to which a producer-motivated type of organization is able to bring about a more economical and rational organization of the industry than is likely to be brought about by profit-motivated enterprises.

TRADE AREAS OF IOWA COOPERATIVE CREAMERIES

The organization of producing areas for butterfat disposal vitally affects the net price a creamery can pay its patrons. Prevailing patronage relationships, as they relate to such organization are, therefore, significant. It is in this connection, also, that important effects of prevailing methods of competition on the economic organization of the industry are revealed.

In figure 9 the trade areas of the cooperative creameries included in this study are shown. These creameries represent approximately half of the cooperative creameries or about one-fourth of all the creameries in the State.

The relationship existing among the trade areas of even this number of creameries suggests that a considerable amount of duplication of facilities and services apparently exists. Superimposing upon this map the trade areas of the other 347 creameries would in many areas obscure the outlines of the areas served by any one of the creameries. Analysis of the situation reveals that a considerable number of factors contribute to the general situation.

Factors Determining Size of Trade Areas

One of the most striking facts, although not the most significant, is the wide variations that occur in size of trade areas. In table 25 is shown the distribution of 107 creameries among the different size

TRADE TERRITORIES SERVED BY 139 IOWA

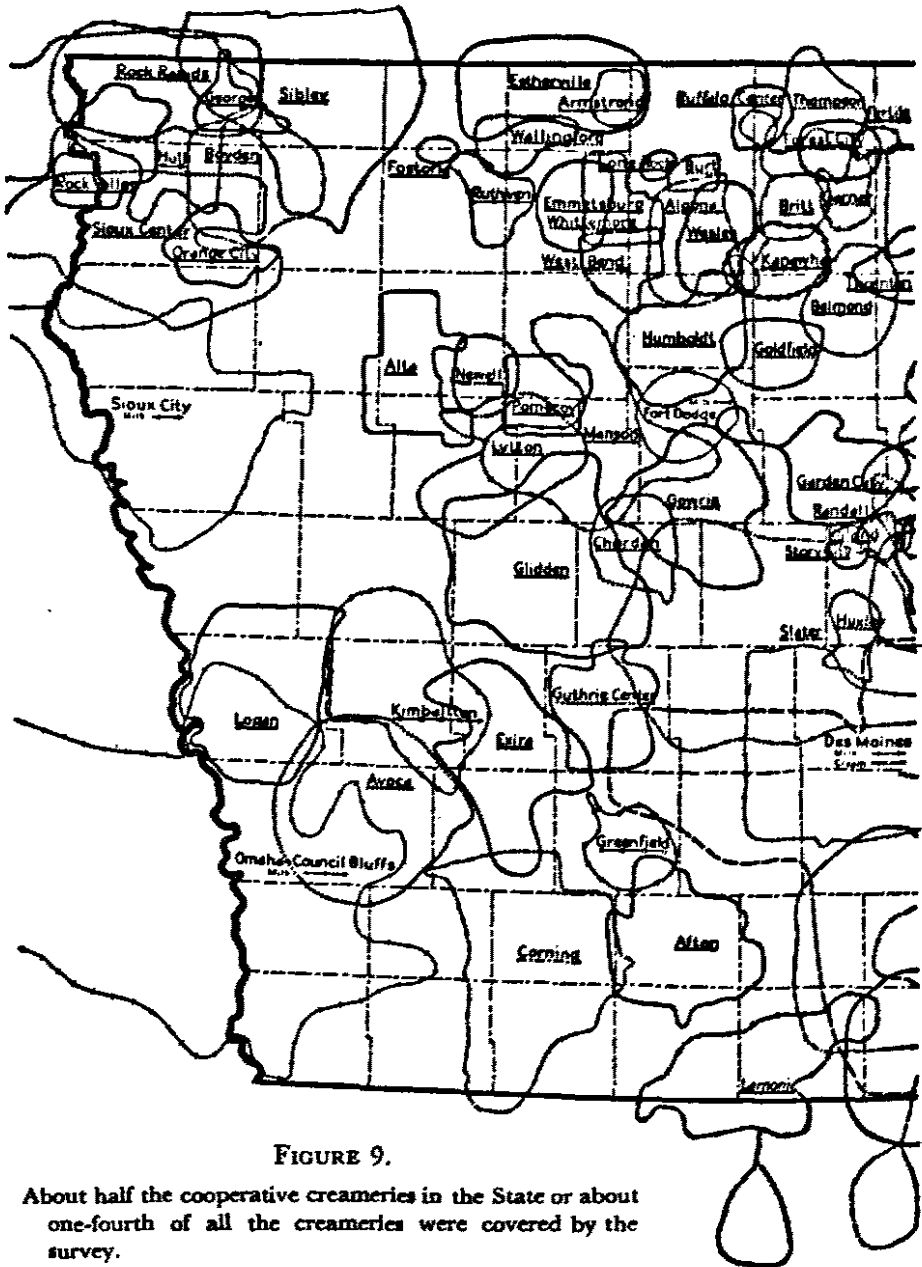
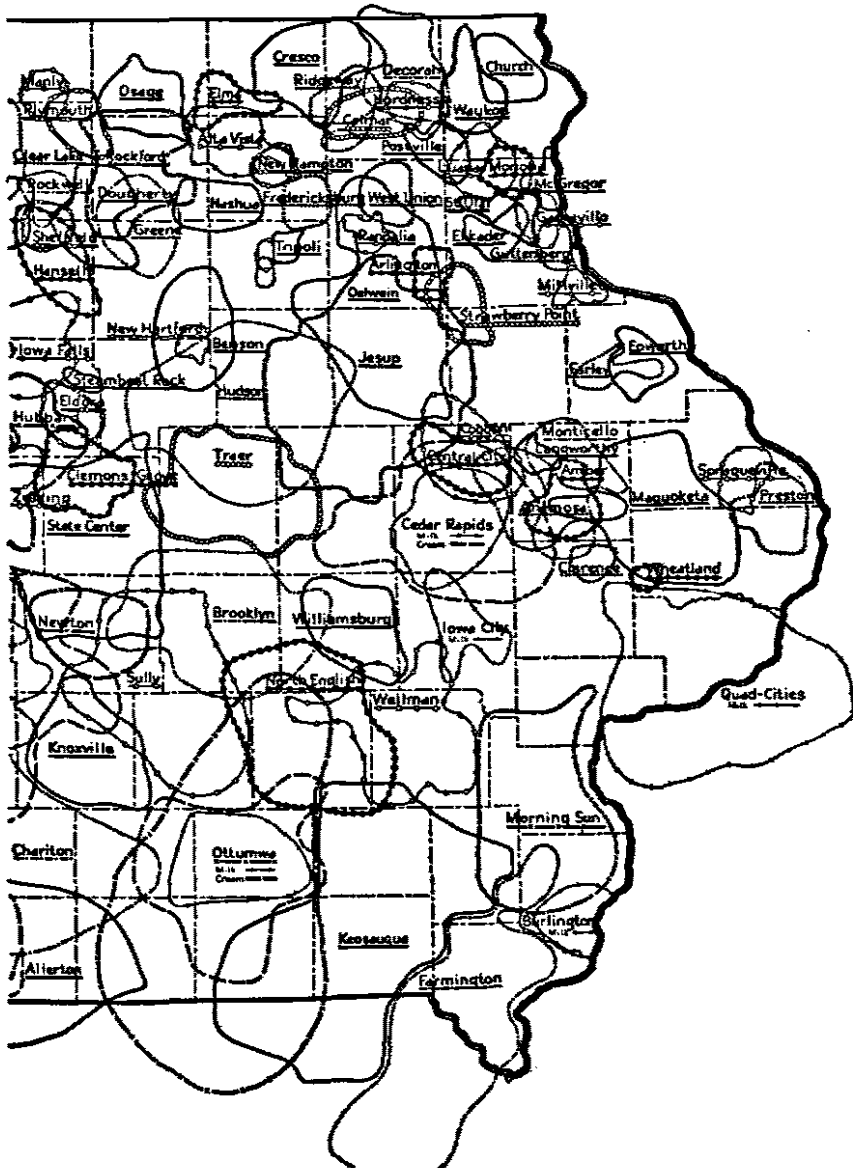


FIGURE 9.

About half the cooperative creameries in the State or about one-fourth of all the creameries were covered by the survey.

groups, by State divisions. Because size of trade territory and volume of butterfat handled are closely related, it follows that a large majority of the creameries will be found in the small-territory groups. This tendency for volume to vary with size of trade areas is illustrated in table 26. It should be noted, however, that wide deviations from

FARMERS' CREAMERIES, DURING 1935



this general tendency exist. The concentration of butterfat production, and the proportion of that production that a given creamery receives have important effects on the area necessary to provide a given volume of business. These two factors together have contributed in varying degree to the situation illustrated in figure 9.

TABLE 25.—DISTRIBUTION OF 107 COOPERATIVE CREAMERIES BY GEOGRAPHIC DIVISIONS ON THE BASIS OF SIZE OF TRADE AREA¹

Size of trade area (square miles)	Number of creameries by State divisions				Percentage of creameries by State divisions			
	North-eastern	Central and north-western	Southern	Total	North-eastern	Central and north-western	Southern	Total
Less than 250.....	21	21	4	46	65.8	48.6	12.8	41.4
250-499.....	7	13	6	26	21.5	28.2	21.1	26.3
500-749.....	1	5	4	10	2.1	10.8	12.8	9.3
750-999.....		2	7	9		4.4	24.1	8.4
1,000-1,249.....	1	1	3	5	2.1	2.2	10.2	4.6
1,250-1,499.....	1	2	2	5	2.1	4.4	6.8	4.6
1,500-1,749.....	1		1	2	2.1			
1,750-1,999.....		1	1	2		2.2	3.4	1.8
2,000-2,249.....		1	1	2		2.2	3.4	1.8
2,250-2,499.....								
2,500-2,749.....								
2,750-2,999.....			1	1			3.4	.9
Total.....	32	46	29	107	100	100	100	100

¹ For area included in each division, see figure 9.

TABLE 26.—RELATIONSHIP BETWEEN SIZE OF TRADE AREA AND VOLUME OF BUSINESS OF 108 COOPERATIVE CREAMERIES

Size of trade area (square miles)	Average volume of butterfat handled annually per creamery, by State divisions ¹							
	Northeastern Iowa		Central and north-western Iowa		Southern Iowa		Total for State	
	Creameries	Volume	Creameries	Volume	Creameries	Volume	Creameries	Volume
Less than 100.....	Number	1,000 pounds	Number	1,000 pounds	Number	1,000 pounds	Number	1,000 pounds
100-199.....	8	199	9	178	2	123	19	177
200-299.....	11	470	6	260	1	314	18	291
300-399.....	6	425	8	284	3	290	17	290
400-499.....	7	701	3	378	2	297	12	647
500-599.....	1	493	4	740	2	287	7	575
600-699.....			1	1,264	1	211	2	787
700-799.....			3	603	3	349	6	474
800-899.....	1	709	1	539	1	1,307	3	851
900-999.....					1	540	1	540
1,000 or more.....			2	1,296	5	533	7	725
Average volume.....	3	1,751	5	1,955	8	832	18	1,359
Average volume.....	37	556	42	625	29	515	108	572

¹ The State divisions are those shown in fig. 1, p. 2.

Density of butterfat production.—The distribution of 108 cooperative creameries by geographic areas, on the basis of the density of butterfat production in their respective trade areas, is shown in table 27. Whereas the production in southern and southwestern Iowa was 2,266 pounds per square mile, in northeastern Iowa it was more than double this figure. The central and northwestern sections of Iowa occupy an intermediate position in this respect. The range in each area is wide.

To a large extent, the small areas served by the creameries in northeastern Iowa result from road and transportation conditions that pre-

vailed here during the early history of the cooperative-creamery movement. The relatively heavy concentration of production in this section makes it possible even now for a creamery to operate in a small trade area. The map (fig. 10) showing trade areas indicates that even here the areas are increasing in size as improvement in roads takes place. In the southern part of the State, where production is sparse, relatively large areas must be covered in order to provide the volume necessary for successful operation. The fact that cooperative creameries entered southern Iowa rather recently, following extensive road improvements, enabled the southern Iowa creameries to establish themselves at the outset on the basis of truck transportation.

TABLE 27.—DISTRIBUTION OF 108 COOPERATIVE CREAMERIES ON BASIS OF DENSITY OF BUTTERFAT PRODUCTION IN THEIR TRADE AREAS, BY STATE DIVISIONS

Butterfat production per square mile (pounds)	Number of creameries, by State divisions			
	Northeastern Iowa	Central and north-western Iowa	Southern Iowa	Total for State
1,000 to 1,499			2	2
1,500 to 1,999			3	3
2,000 to 2,499		4	16	20
2,500 to 2,999		5	3	8
3,000 to 3,499		13	2	15
3,500 to 3,999	3	16	1	20
4,000 to 4,499	8	3		11
4,500 to 4,999	7	1		8
5,000 to 5,499	13			13
5,500 to 5,999	3			3
6,000 or more	3			3
Total	37	42	29	108
Average production of butterfat per square mile	Pounds 4, 588	Pounds 3, 363	Pounds 2, 266	Pounds 3, 561

Proportion of local production handled.—Variations in size of trade areas for associations in the same section, having the same volume, still remain to be explained. Such variations are closely associated with the proportion of the production in a creamery's trade area that the creamery receives. It has already been suggested that the character of the relationship which exists between the organization and its patrons with reference to patronage has an important bearing upon the methods used by the creamery to assure itself an adequate volume of business. It has also been suggested that, as a general rule, the price paid for butterfat was the dominant factor in patronage. Since a large number of factors influence the price which a creamery can pay for butterfat, the prices paid by different creameries vary widely. As a consequence it is to be expected that the proportion which a given creamery receives of the total production in its area would also vary widely. The distribution of 108 creameries on the basis of the proportion of the production received, by State divisions, is presented in table 28

Probably the most significant fact revealed by these figures is that for the State as a whole, almost two-thirds of the creameries receive less than half the butterfat produced for sale in their respective trade areas. Only about one out of five creameries receives over 70 percent of the production in its trade area. It is significant that about one-third of these creameries receive 30 percent or less of the production in their trade areas; the average for 108 creameries is 47 percent.*

TABLE 28.—DISTRIBUTION OF 108 COOPERATIVE CREAMERIES ON BASIS OF PROPORTION OF PRODUCTION IN THEIR TRADE AREAS RECEIVED BY THEM, BY STATE DIVISIONS

Percentage of production received by creamery	Number of creameries by State divisions			
	Northeastern Iowa	Central and northwestern Iowa	Southern Iowa	All divisions
1-10.....			2	2
11-20.....	1	2	5	8
21-30.....	7	8	9	24
31-40.....	5	4	4	13
41-50.....	9	10	3	22
51-60.....	3	3	2	8
61-70.....	4	6	1	11
71-80.....	3	4		7
81-90.....		2	1	3
91-100.....	5	3	2	10
Total.....	37	42	20	108
Average percentage received.....	Percent 52	Percent 51	Percent 36	Percent 47

Considerable variation in the proportion of production received by the creameries was noted among the several divisions of the State. (See fig. 1, p. 3.) The average for northeastern Iowa was 52 percent; that for northwestern and central Iowa, 51 percent; and the average for southern and southwestern Iowa, 36 percent. Wide differences also were found among creameries within each of the State divisions.

A creamery may obtain a given volume of business either by getting a large proportion of the production in a relatively small trade area, or by getting a small proportion of the production in a relatively large trade area. Although, in actual practice, some creameries use different combinations of the two methods, many follow one or the other policy almost exclusively.

In general, charging a flat hauling rate over the whole area places no disadvantage on distance from the creamery and encourages extension of trade areas. If differential hauling rates are used, it would be expected that producers nearest a given plant would have

* The percentages here used were based on production data from the 1920 census, which gives only county figures. It was, therefore, necessary to assume that the county production was evenly distributed within the county; hence, the percentages for individual creameries are subject to some error. The trade area figures, however, were computed from trade area maps drawn in each case by a representative of the creamery.

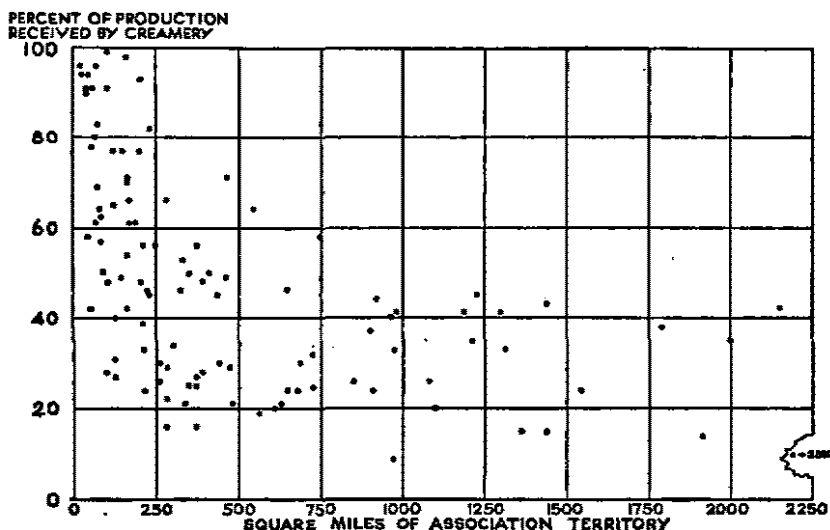


FIGURE 10.—RELATIONSHIP BETWEEN SIZE OF TRADE AREA AND PROPORTION OF BUTTERFAT PRODUCTION HANDLED BY 108 COOPERATIVE CREAMERIES IN IOWA.

Of the 31 creameries that receive more than 60 percent of the butterfat production in their trade areas, all but 3 serve areas of less than 250 square miles.

the advantage and would tend to concentrate their product at that plant. The increase in hauling rates as distance increases would act as a deterrent to extension of the trade area. However, distance differentials usually are not adopted with the avowed purpose of concentrating the volume of business in the smallest possible area, but because conditions of production, transportation, and competition make for such large trade areas that flat rates are manifestly inequitable.

Since cost of transportation increases as the distance butterfat is transported increases, it is to the best interest of producers to have their butterfat processed in plants that obtain the necessary volume within the smallest practical area. This purpose will be served best when all of the butterfat in a given area is delivered to one plant so located as to serve the area most advantageously.

Examination of the figures indicates that a large proportion of the creameries fail even to approximate this desirable situation. If a given area of considerable size were being organized for marketing now for the first time, no doubt the difficulties of determining the volume that each plant should process, the area from which this volume should be obtained, and the most economical methods of assembling the butterfat, would be relatively simple. However, different organizations were started at various times and under a variety of conditions. These conditions themselves are constantly changing. Hence, the present overlapping of territories served, to a large extent is merely indicative of the practical difficulties encoun-

tered in any attempt to work out an efficient, economic organization of the industry.

Although it is apparent that competitive policies, patronage relationships, and other important matters are frequently decided with little or no consideration of the basic factors that affect the best long-time interest of producers, it appears that some progress has been made in this direction. Although community pride, vested interests, and other factors may tend to retard progress, a mutual understanding among creamery officials and producers of the extent to which the price paid patrons is lower than it needs to be and the reasons therefor would undoubtedly result in complete reorganization of many overlapping trade areas and a consequent reduction in excessive costs of assembling and processing butterfat.

The need for reorganizing trade areas is indicated by figure 10, which illustrates the extent to which creameries, unable to attract a sufficient proportion of the production in nearby areas, are forced to extend their cream routes.

Other Factors Affecting the Patronage Relationship

It is significant that of the 24 creameries serving trade areas of over 750 square miles, none receives even 50 percent of the butterfat of the area. On the other hand, of the 31 creameries that receive over 60 percent of the production, all but 3 serve areas of less than 250 square miles. It is significant also that a large proportion even of the creameries that serve small areas receive relatively small proportions of the production in the areas served.

This is true in southern Iowa, where less overlapping of trade areas appears to occur than elsewhere. An important reason for this is the competition of independent creameries and centralizers. A comparison of the location of all creameries (fig. 1) in relation to the trade areas of the cooperative creameries in southern Iowa, reveals the extent to which the trade areas of the cooperative creameries are dotted with independent creameries. To these must be added a large number of assembling stations operated by centralizers which are not shown on the map.

Another factor in the situation is that in southern Iowa, dirt roads comprise a high percentage of the total mileage of roads. During such time as the dirt roads are impassable for trucks, producers on these roads cannot be served by cooperative creameries that transport butterfat only by truck. Producers are then compelled to deliver their own butterfat to the nearest available outlet. Consideration should be given to the problem of making the service of the cooperative creameries accessible to all producers instead of only to those located on improved roads.

A significant relationship was also found to exist between density of production and the proportion of the production received by a

given cooperative creamery (table 29). It appears, however, that the product of heavy producing areas is almost as frequently divided among several competing agencies as is that of sparse producing areas. The map showing the trade areas (fig. 9) bears out this conclusion.

The data in table 30 reveal a definite tendency for those associations that receive a high percentage of the production in their areas to obtain large volumes per patron. This fact points to a conclusion of vital importance in connection with the cooperative marketing of butterfat in Iowa; namely, that a cooperative creamery has a much greater prospect of being assured of the patronage of producers if butterfat is a sufficiently important source of income to them to cause them to become concerned about its marketing. Conversely, if butterfat is a relatively unimportant source of income, producers are not likely to be willing to assume obligations in connection with its marketing. It is probable that the indifference of small producers is one of the most serious difficulties that limit the development of cooperative creameries.

TABLE 29.—RELATIONSHIP BETWEEN DENSITY OF BUTTERFAT PRODUCTION AND PERCENTAGE OF PRODUCTION RECEIVED BY CREAMERY

Butterfat produced for sale (pounds per square mile)	Number of creameries	Percentage of production received by creamery
Less than 2,000.....	7	28.5
2,000-2,999.....	28	37.0
3,000-3,999.....	35	52.8
4,000-4,999.....	19	47.7
5,000-5,999.....	18	58.2
6,000 and over.....	3	67.0
Total, all creameries.....	108	47.9

TABLE 30.—RELATIONSHIP BETWEEN VOLUME OF BUTTERFAT RECEIVED PER PATRON AND PERCENTAGE OF PRODUCTION IN AREA RECEIVED BY CREAMERY

Butterfat received per patron per year (pounds)	Number of creameries	Percentage of production in area received by creamery
Less than 750.....	10	21.6
750-999.....	23	31.1
1,000-1,249.....	36	50.7
1,250-1,499.....	20	56.9
1,500-1,749.....	10	68.3
1,750-1,999.....	3	70.7
2,000 and over.....	5	76.0
Total.....	107	47.4

Those producers, even in areas of sparse production, to whom it is a matter of considerable importance to maximize their returns from their dairy enterprise, are themselves likely to assume the responsi-

bility of establishing a creamery and will tend to concentrate their patronage at the plant which best serves their interest. It may be necessary in some such cases to serve a large area in order to bring together a sufficient number of interested producers to finance the organization. Such additional patronage as may then be obtained from others will accrue to the advantage of these large producers through reductions in manufacturing costs, but the indifference of large numbers of small producers may still cause the organization to receive a relatively small proportion of the total production of the area.

Although some of the factors that affect the proportion of production received by a creamery are beyond the control of individual associations, others are definitely within their control. Education of the producers regarding the extent to which it is to their best interest to concentrate the processing and marketing of their products into the most economical units is probably the most important means of controlling this situation at the disposal of the association. Even in areas of sparse production, some associations have been able to concentrate high percentages of the area's production through constant efforts to keep producers informed and interested.

Such educational efforts are likely to be effective only if the organization is at the same time doing its utmost to promote producers' interests; and this is likely to be the case only if constant efforts are made to discover wherein further economies may be effected. In a period of rapid changes, the struggle for survival is likely to be intensified. The organizations most likely to survive such a struggle are those that can most accurately appraise the significance of fundamental factors affecting the situation, anticipate current trends, and adjust themselves to them most quickly.

PARTICIPATION OF PATRONS IN BENEFITS AND COSTS

IN THE discussion thus far it has been assumed that the creameries were operated for the sole benefit of patrons, and that as a consequence, patrons were required to assume essential membership obligations. To this end it has been necessary to associate control and financing of the organization closely with patronage. The following are some of the major considerations implied in the statement that the patron is to receive the benefits and assume responsibility for the costs and risks of operation.

EXTENT OF PATRON PARTICIPATION

The extent to which patrons of the creamery actually are the sole beneficiaries of the operations is the first major consideration, and this may be disposed of rather briefly. On the whole, the intentions

of the cooperative creameries studied have been to operate for the benefit of patrons; and control devices adopted, with few exceptions, have been designed to insure the continuation of operations on that basis. The adoption of faulty forms of organization sometimes has made it possible for persons other than patrons to assume control and derive benefits, but here the producer interest has been sufficiently self-assertive to overcome many of the defects in the cooperative set-up. Lack of active participation by patrons has in some cases caused managers, stockholders, cream haulers, or others, to exert considerable influence, sometimes against the best interest of patrons. Even so, the patrons, on the whole, have participated to a high degree in such benefits as the creameries have achieved.

EQUITY OF PATRON PARTICIPATION

Whether or not the association's patrons have participated in these benefits on an equitable basis is the second major consideration. As a corollary of equitable participation in benefits is the principle that beneficiaries shall participate in the costs and risks on an equitable basis. To the extent that the method of allocating benefits involves allocating costs, the two are inseparable; that is, equity as among patrons becomes a function of the method of operation.

Interest in the problem of equitable participation in benefits and costs is most likely to arise at three periods during the life of a cooperative. The first is the current settlement or pooling period, at the end of which the price that is to be paid patrons for butterfat is calculated.

Since such payments are frequently in the nature of approximations, adjustments in which are postponed until the end of the year, the second period is the fiscal year. Whether or not patrons will participate in additional benefits at the end of the year depends on the methods used in allocating benefits and costs that accrue throughout the year. Moreover, new situations affecting policies of participation enter at this point.

Finally, questions of policy arise in connection with the accumulation of capital, acquisition of additional plant and equipment, and the maintenance of such capital and assets from the long-time point of view. The basis upon which patrons shall contribute to and share in such assets is the important consideration from this point of view.

Although these different periods or points of time are interrelated in many respects, each has aspects that are peculiar to itself. We shall first discuss the considerations involved in equitable participation of patrons in current settlements.

Current Settlements

The usual method of determining the allocation of benefits in the current period is that of pooling, or on a "net proceeds" basis. Briefly,

this method consists of receiving the butterfat from patrons, manufacturing it into butter, selling the butter and receiving the proceeds from sales; deducting therefrom the expenses attributable to the product handled during the period, and distributing the net proceeds pro rata to those who contributed butterfat during the period.

The essential features of this plan are: (1) Patrons participate in net proceeds on the basis of patronage contributed; (2) expenses per unit of product are spread on a patronage basis; and (3) the deferment of payments inherent in the pooling process results in shifting certain risks of operation to patrons, also on a patronage basis. In brief patronage becomes the basis of participation.

Pooling of revenues.—In connection with the pooling of income from sales, two important types of considerations are involved; namely, those growing out of differences in time of delivery, and those growing out of differences in quality of product delivered.

It is characteristic of the creamery industry that the raw material (butterfat) is produced daily, comes to market and is sold currently throughout the year. While seasonal variations in production occur, annual or seasonal pools would serve no purpose, because producers have little choice as to time of sale. Pooling of returns as practiced by creameries is not a method designed to spread risks arising out of the producer's choice of time of sale, but a method by which patrons may contribute capital and assume the risks of price and cost fluctuations. Incidentally, some saving in clerical labor is possible where periodic rather than daily payments are made for butterfat.

The pooling period for 108 associations paying on a pool basis was as follows:

Period:	Number of associations
1 week.....	8
2 weeks.....	1
½ month.....	88
1 month.....	11
Total.....	108

Although no accurate information on the point is available, it is generally conceded that the length of the pool period has been growing shorter in recent years, especially during the depression. This is probably induced by the farmers' shortage of ready cash, rather than by considerations involving the equity of the length of the pooling period.

The second consideration on the revenue side of the pooling operation arises because of differences in quality of product delivered. For example, if two patrons who deliver butterfat of different quality are to participate equitably on the basis of the quality of their respective deliveries, the prices they receive should reflect differences in

the market value of the finished product made from different grades of raw material. This result would be obtained directly if the association should operate separate pools based on differences in the quality of the butterfat received. None of the associations, however, operates such pools, the reasons being: (1) Volume of low-quality butterfat is not sufficiently large to warrant churning it separately; (2) distribution of costs among the several pools would be difficult; (3) the method of sale often results in one price being received for all the butter; that is, a certain minimum amount of undergrade butter is tolerated under the "one price" sales outlet agreements commonly used.

As a substitute for quality pools, 33 associations paid fixed differentials for different grades of cream. One association paid a premium of 1 cent for the better grade of cream, 19 paid 2 cents, 10 paid 3 cents, 1 paid 4 cents, and 2 varied the differentials. In many cases the amount of the differential was fixed without regard to differences in value of finished products. If market prices fail to reflect differences in quality, a question arises as to whether or not the payment of fixed differentials is justified.¹⁰

The payment of differentials, however, has had the effect of standardizing the quality of the cream received on a higher level than would otherwise have prevailed. To the extent that standardization in quality results, the inequity of paying fixed differentials is largely eliminated. Extreme measures designed to standardize the quality of butterfat on a high level have been taken by six associations, which refuse to receive any but sweet cream. Seventy-six associations refuse to accept the cream of lowest grade.

Pooling expenses.—The second essential feature of the net-proceeds method of settlement is that the costs of operation are also pooled and are borne by the patrons on a patronage basis. As a result of different methods of allocating fixed and current costs, and policies followed with reference to the inclusion of certain items of cost in either class, many important questions of equity arise in connection with the pooling of expenses.

Cost items differ in nature, and it is questionable whether the same rule applied to all items would result in equitable settlements. Some cost items, such as salt, packages and liners, transportation, and others, vary in amount directly as the volume of product varies; that is, the unit cost of such items tends to remain constant regardless of volume. However, a large number of other costs, such as management, most labor, accounting, audits, taxes, insurance, repairs, and depreciation, are related to time; they accrue currently but are

¹⁰ During the summer of 1935 a law providing for compulsory grading of cream was passed in Iowa (ch. 160 G-1, Iowa code of 1935). Minimum differentials to be paid were specified in the law. The survey upon which the preceding discussion is based was made prior to the passage of that law. Undoubtedly the quality program has been materially modified since the survey was made.

paid at regular or irregular intervals of time. Their amount is only indirectly, if at all, related to volume of business. Hence the unit costs of such items vary inversely as the volume varies.

A strictly equitable method of allocating costs would spread each item of cost in such a manner that each unit of product that received benefit from the cost incurred, would be charged with its proportionate share of such cost. Hence, the unit of product suggests itself as an equitable basis of allocating costs. Items, such as supplies used, transportation, and other direct costs that are incurred in a given period, may be charged directly to the product handled during that period. However, costs that are not incurred proportionately to volume, should be reduced as nearly as possible to a rate-per-unit-of-product basis. The amount charged to a given period would then be the unit cost multiplied by the number of units of product handled during the period.

A small group of creameries based their deductions for cost on a unit-of-product basis. The amount charged per unit was based upon the experience of the previous year, in which the annual cost had been spread over the annual volume of product. Thus, if the average total cost per pound of butterfat in the previous year was 3 cents, that figure was used as a current deduction per unit of product for each settlement period.

A single association was found that went to the opposite extreme and placed all its costs on a time basis. This association used semi-monthly pools and used, as a basis of allocating its costs, one twenty-fourth of the previous year's total cost.

The majority of associations choose a middle course between the two extremes by placing supplies and other current expenses on a unit-of-product basis and most other costs on a time basis. Under this system, costs that tend to be proportional to volume are spread equitably if the quantity used rather than the quantity purchased during the period is used as the basis for calculating the amount to be charged to the period. Usually those costs that are not proportional to volume are allocated on a time basis, so that in periods when the volume of product is high the per-unit charge is too low, and vice versa. Some associations using the time method of allocating expenses, modify the procedure somewhat by varying the amount reserved for depreciation, taxes, and other accruing items currently set aside according to the volume of business handled during the period. This is not a common practice, the usual method being to deduct the same fixed amount for such reserves in each period.

A number of associations go so far as to make no deduction for some of the accruing cost items, particularly depreciation. Only 84 of the 112 associations currently set aside reserves for depreciation; the others are either liquidating their assets through overpayments for butterfat or are forced to charge repairs and replacements against

the period in which such expenses are paid. Similarly, only 70 associations provided reserves for taxes, interest, and insurance; while 42 charge expenditures for such items against the income of the period in which the expenditures are made.

Much the same procedure is usually followed with reference to items of cost which it is usually impossible to anticipate. Practically every creamery incurs some such costs from time to time; and unless special provision is made for meeting them, they must be absorbed in the expenses currently deducted or charged to the surplus account or to the "sinking fund."

A more desirable procedure would be to include an additional deduction during each period for a "contingent reserve", or to include a reasonable amount for such purposes in calculating the average annual rate per unit of product. This procedure is particularly desirable in cases in which the average annual rate is used, because of the desirability of anticipating unforeseen costs as well as possible increases in some or all of the cost items that may occur in a given year in comparison with other years. Although the surplus account might be used to absorb such items, it has already been pointed out that the surplus of most associations is usually required to finance the assets of the organization and thus provides inadequate protection against such contingencies.

Briefly, then, it appears highly desirable that in arriving at the "net proceeds" for the period, the interpretation of costs should be one in which each unit of product is charged with its proportionate share of costs over at least a year's time. Since disbursements for supplies, unforeseen items, taxes, insurance, and other indirect charges are highly variable in the different settlement periods, equitable treatment of all patrons requires that per-unit charges to cover such items be "smoothed." This procedure will result in the accumulation of funds in periods when actual disbursements are lower than calculated costs, and vice versa. Such accumulations or deficits should not be regarded as underpayments or overpayments to patrons, but as balances to be carried forward in anticipation of fluctuations which are expected to occur in subsequent periods.

Since the deliveries of patrons vary from one period to another, the payment of all proceeds in excess of the period's actual disbursements results directly in inequitable distribution of costs among patrons. Furthermore, prices based on fluctuating disbursements rather than on actual average costs do not reflect currently the efficiency of the creamery concerned, and therefore introduce a highly variable factor into an already chaotic competitive situation.

Deviations from the net-proceeds basis.—Since variations in the interpretation of costs among associations are not revealed by their balance sheets, it is impossible to determine from the records available the exact extent to which the creameries adhere to the net-proceeds basis

of settlement. It is probable that at least three-fourths of the associations surveyed intend that over a year's time the amounts reserved for expenses shall equal the cash expenses plus accruing costs, such as depreciation. Such discrepancies as may result from miscalculations are corrected in subsequent periods. Associations that do not fall into this class are those that consistently underpay or overpay in current periods, thus deferring until the end of the year or indefinitely the time when the problem of equitable participation will arise.

Associations that underpay.—Associations that deviate from the net-proceeds basis of settlement by underpaying in current periods accumulate funds as a result of the year's operation and must consider the equitable distribution of such funds.

Six associations were found in which the current payments were regarded as advances only, a final settlement being made in the form of a patronage dividend at the end of the year. However, the basis of distributing such dividends varies. In one case members and nonmembers participated alike in the patronage dividends. In another case patronage dividends were paid only on deliveries of first-grade cream, in spite of the fact that a 2-cent premium was paid currently on such butterfat. If this premium is equitable, then the additional payment in the form of a patronage dividend only on first-quality butterfat may result in penalizing unreasonably the producers of low-grade butterfat. Such inequity would exist, not between members and nonmembers, but between member-patrons delivering high-grade cream and those delivering low-grade cream.

The other four associations pay competitive prices currently and at the end of the year pay patronage dividends only to members, the purpose being to create an inducement for patrons to become members. As a further inducement, the par value of stock is low in all four cases, and in one case patronage dividends may be applied on the purchase price of stock. In these associations nearly all stockholders are patrons, and all patrons are urged to become members.

Another group of five associations pays patronage dividends from profits on side-line enterprises. One conducts a poultry enterprise and distributes the earnings on a patronage basis to the poultry patrons, whether or not they are members of the association. Another has a gas and oil business and distributes earnings from this source on a patronage basis to all gas and oil patrons. The other three designate the buttermilk business as a "member enterprise." The proceeds of buttermilk, sold as such or fed to hogs, are paid only to members on the basis of their butterfat patronage. It is significant that these three associations pay no dividends on their stock. The patronage dividends may be regarded as a return on capital, but this is illogical inasmuch as it is made on a patronage basis rather than on the amount of capital contributed. At the same time, stock outstanding is not an

important factor in financing these particular associations, so the extra returns can hardly be justified on that basis. The payment of patronage dividends to members only is not in these cases associated with a policy designed to increase the membership. It must be considered as a special return to members as such, made at the expense of nonmembers who furnished the major portion of the business.

Other associations, as previously noted, finance expansion of their business and facilities through earnings which result from current underpayments. Discussion of the equity of such procedure will be deferred to a later section.

Associations that overpay.—The situation of creameries that persistently overpay can best be described as pathological. They represent creameries that are dissipating their capital in an attempt to meet competition. If proper deductions were made by all creameries for depreciation and items other than cash expenditures, probably a larger number of them would fall into this class.

The question of inequitable participation in such cases arises as between current patrons and the suppliers of capital. If the overpayments are made instead of debts being paid, the current patrons benefit at the expense of creditors, who may or may not be producers. If the overpayments are made instead of properly maintaining capital assets, the current patrons benefit at the expense of the earlier capital contributors. To the extent that the situation results from competition, the association is likely to adopt any and all means at its disposal in its struggle for survival, and adherence to cooperative principles is largely neglected.

Risk sharing under deferred payment.—While the great majority of Iowa creameries operate on the net-proceeds basis, or some modification of it, two associations operate on a strictly cash basis, and several others do a cash business to some extent. Paying cash for cream currently on the basis of current market prices involves a shift of certain commercial risks from the patron to the association. Where this occurs, capital, by whomever supplied, must assume such risks. If patrons insist upon shifting risks to capital, they must be prepared to pay capital for assuming them, and probably to relinquish some measure of control of the organization to those who furnish the capital.

When payment to patrons is deferred until after the product is sold and proceeds from sales are received, patrons assume risks of two types; first, the risk of short-time price fluctuations, and second, the risk of nonpayment, and possible damage to or deterioration of the product.

The extent to which payments are deferred after the close of the pool period varies widely. Out of 105 associations that pooled, 7 paid without lapse of time at the end of the period, while 19 paid

within 10 days, 71 waited from 11 to 20 days, and 8 waited from 3 weeks to a month.¹¹ It is apparent that the extent to which the ordinary business risks are borne by the patrons varies widely, but that in practically all cases the patrons assume at least the risks incident to current price and cost fluctuations.

Participation of nonmembers in current settlements.—The discussion of participation thus far has assumed that all patrons were given equal consideration—the nonmember problem has been ignored. Some associations discriminate between member and nonmember patrons even in current settlements.

In general, the nonstock associations do not have a nonmember problem. Three nonstock associations, however, purchased some cream for cash and considered as members only patrons who pooled their cream. In all three cases the associations resorted to cash payments in an effort to maintain volume in the face of severe competition. In two of these cases the cash price was lower than the pool price, the cash price being the prevailing market price. In the other case the cash price was set by independent route competition, and at so high a level that the pool patrons, sharing the remaining income, received a lower price.

Because a large proportion of their patrons are nonmembers, stock associations are forced to take cognizance of the nonmember problem. However, of the 51 stock associations, only 6 paid a lower price to nonmembers than to members. In one case, nonmembers were assessed 3 percent of the value of butterfat for the sinking fund, as compared with 2 percent for members. The other five associations levied a "manufacturing" or "service charge" against nonmembers, at the rate of 2 percent of returns in one case and ranging from 0.25 to 1 cent per pound of butterfat in the other four cases.

In discussing the equity of these charges, each case needs to be considered on its own merits. In general, the charge is not made with the intention of exploiting nonmembers, although this may result in some cases.

In three cases, the nonmember charge is used as part of the program for making members of nonmember patrons, an aspect of the question that has already been discussed. In all three of these cases the par value of stock is low (\$2, \$5, and \$10) and one association applies the nonmember charges toward purchases of stock. Under these conditions, little or no inequity results.

The cases of the other three creameries, however, are not so meritorious. Though the nonmember charge is not excessive, patrons usually cannot avoid it by becoming members, because membership can be obtained only by transfers of stock. In one case, additional

¹¹ For data showing variations in total number of days elapsing between beginning of pool period and date of payment, see table 18.

stock was not issued because no more capital was needed. Another creamery contemplates reorganization within a short time on a strictly cooperative basis and is, therefore, postponing action with regard to its present stock. Meanwhile, nonmember patrons are denied the privilege of becoming members, and the resulting inequity is recognized by the management. In the third case, the nonmember charge is associated with high dividends on stock and the accumulation of a large surplus.

Participation in Accumulated Assets

Underpayments in current settlements which result in net earnings to the association for the year's operations and which are not prorated as patronage dividends give rise to the problem of participation in accumulated assets. These accumulated earnings usually appear in the balance sheet of the association as surplus.

In most cases where such surpluses are accumulated, it is done with no intention of exploiting nonmembers. It represents, rather, a means commonly adopted of financing the business. Apparently it is easier to accumulate capital in small increments out of earnings than to obtain cash contributions from members, especially where additional capital is needed subsequent to the initial membership campaign.

A few associations, however, intentionally build up a large surplus which will subsequently accrue to members only. Members have been able actually to realize on such surplus accumulations in only a few cases. They cannot draw them out without dissolving the organization and selling the assets, in which case much less than book value would be realized for them. To the extent that stockholders are also patrons, they usually choose to renew the charter and continue operations rather than to dissolve the creamery.

A number of conflicting viewpoints arise in connection with the question of participation in accumulated surplus. The amount of the surplus is usually limited to the amount required to make up the deficiency in contributed membership capital. Creamery associations usually do not have large amounts of cash or fluid assets in excess of requirements for operating and reserves. That they do not is evidence either of their lack of intention to exploit nonmembers (which is highly commendable) or of their inability to do so because of competitive conditions, which, while not so laudable, may provide a measure of protection to nonmembers against exploitation.

Thus, the surplus is usually limited to the financing of facilities which nonmembers usually may use on the same basis as members. The contributions of capital made by nonmembers to surplus may be regarded as a partial assumption of financial responsibility on their part. It may represent a contribution of capital relatively so insignificant that little justification may exist for questioning its equitableness. A question may, in fact, arise as to whether greater inequities exist

because nonmembers do not contribute more capital. In any case if nonmembers were assigned a definite property interest in such contributions, little basis for charges of inequity would exist. Since such accumulations may become a bone of contention over which an association may be wrecked, anything short of an equitable basis of participation in such accumulations has practical significance beyond the warranted by the amount involved.

Additions to assets, after current and annual distributions of income have been made, become part of the permanent assets of the organization, which, as has been shown, tend to increase with the age of the organization. The need for equitable participation of members in the ownership of such assets and in their distribution in case of reorganization or dissolution cannot safely be ignored. Procedures and methods by which individual member's capital interests may be made specific and the amount thereof adjusted to the use made of the organization by individual members, have been discussed in the section on financing, to which the reader is referred.

Indirect Benefits of Cooperative Creameries

The discussion thus far has been concerned with participation in the direct benefits to patrons which grow out of the association's major function—the processing of butterfat. A cooperative creamery may yield benefits quite independent of its processing functions.

One of the major activities of Iowa cooperative creameries has been a campaign for the improvement of quality. All but seven of the associations surveyed had done some work on this problem. Some of the efforts consisted only of disseminating literature regarding quality; but more significant efforts involved handling sanitary supplies at cost, running sediment tests, scoring cream in cooperation with the Extension Service of Iowa State College, haulers and managers doing field work; and finally, adopting the really effective method of paying for cream on the basis of grade. The quality-improvement program should receive considerable stimulus as a result of the passage of a compulsory cream-grading law which took effect July 5, 1935 (ch. 150 G-1, Iowa code of 1935). Cooperative leaders had much to do with the framing of this law.

Other activities of cooperative creameries include the sponsoring of community "dairy days", fairs, 4-H clubs, and dairy-demonstration work. Proper feeding and other production problems have received much attention. This type of work offers a fertile field for cooperative service—one which has not been extended widely enough. Probably one reason why it has not received more attention is the prevalence of an intense competitive situation. Such services cost money, and as long as cooperatives are under pressure to pay out everything available in the form of butterfat prices, extensive expenditures are not likely to be made in rendering service of the more general type.

In an earlier section mention was made of the effect a cooperative may have upon the competitive situation and upon the price prevailing in a local market. The change in the situation brought about in southern Iowa in recent years by cooperative creameries affords a practical illustration. Northeastern Iowa has long been a dairy section, and cooperative creameries have dominated the price situation. Southern Iowa, on the other hand, is a region of sparse milk production, which until recently was known as "centralizer territory." Few cooperative creameries operated in this area prior to 1928, but from 1928 to 1935 an expansion took place which made cooperative creameries accessible to most of the area. The changes in prices that have occurred during this period are shown in table 31.

In 1927, only 8 cooperative creameries were operating in the 42 southern counties, with most of these in the northeastern corner of that area, leaving a large part of the area without access to cooperatives. During 1928, 5 cooperatives were started, bringing the total number in operation to 13. This is the first year for which data are available and in this year the spread between northeastern and southern Iowa prices was 8.7 cents per pound of butterfat. The spread in price was 20.4 percent of the southern Iowa price. During 1929, 1930, and 1931, the number of cooperatives continued to increase until by the end of 1931, 22 were in operation and effectively covering the territory. During these same years, the price spread continued to diminish until it reached an amount that is explainable largely by differences in quality and seasonal production.

TABLE 31.—EFFECT OF COOPERATIVE CREAMERIES ON BUTTERFAT PRICES IN SOUTHERN IOWA

Year	Creameries surveyed which operated in indicated year ²	Annual volume of butterfat handled		Price paid producer per pound of butterfat ¹		
		Total	Average per creamery	In southern Iowa	Amount less than northeastern price	Percentage difference is of southern Iowa price
		1,000 pounds	Pounds	Cents	Cents	Percent
1927	8					
1928	13	2,722	200,400	42.68	8.7	20.4
1929	14	4,893	355,200	43.63	8.9	13.5
1930	19	8,968	336,600	35.25	3.6	10.2
1931	22	9,833	449,200	26.58	2.2	5.3
1932	22	11,191	508,700	19.05	1.7	8.9
1933	23	13,316	578,000	19.60	1.3	6.1
1934	23	15,032	653,000	24.56	2.1	8.6
1935	23	(?)	(?)	26.52	2.3	8.0

¹ Prices are those reported by creameries to the Dairy and Food Division of the Iowa Department of Agriculture. The State divisions are those used by the above office.

² The number of creameries surveyed, indicated opposite each year, is the number of the total of 23 surveyed that were operating in each year. All but 3 of those in operation in southern Iowa in 1934 were included in the survey.

³ Production data for individual plants not available for 1935.

The number of cooperatives has remained almost constant since 1931, as has the percentage spread in prices. The increase in the volume of butterfat handled by the creameries is even more important than the increase in their numbers. Volume almost doubled even after the number of creameries had ceased to increase. Even in 1934, the southern Iowa cooperatives received, on the average, but 33 percent of the butterfat sold in their respective trade areas, yet their influence has been instrumental in raising the price structure for the whole area.

The foregoing experience illustrates what often happens when a cooperative becomes established in a community or area. Since the efforts of competitors to retain volume are beyond the control of the cooperatives, perhaps there is nothing a cooperative can do to limit to its own membership the benefit it brings about. On the other hand, if nonmembers and even nonpatronizing producers may participate in the benefits of the cooperative without assuming any obligation whatever to maintain the organization, they have no incentive to become members.

Limiting the services of the cooperative to members, permitting only members to participate in patronage dividends and the imposition of service or manufacturing charges upon nonmembers, all aim to restrict the benefits of the cooperative to those who are willing to assume membership obligations and responsibilities. Such devices, if they are reasonable and are applied with judgment, may provide practical means to the desired end. They cannot, however, take the place of continuous efforts to enlighten producers as to how they may promote their interests through cooperation and as to the things that are essential for success in cooperation.

SUMMARY

An adequate legal basis for the formation of cooperative business organizations in Iowa will be found in the nonstock cooperative law of 1921, and the new cooperative law of 1935. Many creameries operating under other laws would find it to their advantage to bring their corporate structure up to date. More important, however, is the problem of establishing their relationships with members as to financing, control, patronage, and member-participation on a basis that is consistent with sound cooperative principles. Organization under the cooperative laws mentioned above has distinct advantages in this respect.

Participation of patrons in control.—Nonstock organizations have, to a high degree, vested control in the hands of patrons. On the whole, also, a larger proportion of the patrons of nonstock organizations than of stock organizations actively participate in control. Although some stock organizations that have made a definite effort to bring about

patron participation in control have succeeded in doing so, the fact that voting stock is used as a means of financing as well as the basis of membership, has in actual practice rendered it extremely difficult to make membership coincide with patronage.

The quality of patron participation in control varies widely, and in most cases inadequate efforts are made to keep the patrons and members sufficiently informed regarding their self-interest and the affairs of the organization to enable them to participate intelligently.

Not only the general management, but to a large extent the responsibility of formulating general policies and objectives, is delegated to the board of directors, who in turn frequently delegate much of the authority to the manager or butter maker. Most boards of directors meet frequently enough to keep themselves well informed regarding the business, although numerous exceptions were found. The volume of business of many creameries is too small to support efficient management, in which cases the accounting records and the reports based upon them are likely to be inadequate to promote managerial efficiency or to safeguard the interests of patrons and contributors of capital.

The relationship existing between managers and boards of directors and between boards of directors and the members and patrons is frequently not such as to promote harmony, confidence, and mutual understanding.

Members' obligation to finance.—With the exception of some of the early organizations, financing has been identified with patronage rather than being regarded as an obligation of members and patrons. However, patrons and members have supplied 85 percent of the total capital requirements of the creameries surveyed. The equity of the financial burdens borne by patrons varies for a number of reasons, of which the type of organization is one of the most important. Financial burdens appear to be distributed least equitably in stock organizations and most equitably in revolving-fund organizations.

The burden of financing the original assets is most likely to be inequitably distributed, because of the reluctance of most producers to assume financial obligations until the organization has become established. The extent to which the financial burden may subsequently be distributed more equitably depends upon the methods adopted for financing subsequent expansions of the business. Original contributions of capital in stock and mutual organizations tend to become "frozen," and the fact that subsequent accumulations of capital are usually large and are usually financed out of surplus which has not been allocated to patrons, causes the financial burden to become still more inequitably distributed. On the other hand, in revolving-fund creameries, the original contribution, however inequitable, is repaid. All subsequent accumulations of capital are on an equitable basis, being associated directly with patronage.

Obligation of patrons to patronize.—With the exception of certain features of collateral notes used by some of the early creameries in connection with their original financing, Iowa creameries have not required their members to pledge their patronage. These notes tended to obligate the signers to patronize the creamery at least until the debts were paid. The actual difficulties experienced by creameries in getting established and in maintaining volume, as a result of failure to require such pledges, have not been ascertained. However, the experience of the creameries surveyed indicates that to the extent to which they are assured of the patronage of their members, that assurance depends upon the following factors:

1. The ability of the creamery to meet competition.
2. Personal pride in the organization on the part of patrons who have been associated with the creamery for a long period of time.
3. Conviction on the part of producers that in the long run the cooperative method of selling has inherent advantages.
4. A desire on the part of large capital contributors to protect their investment.

Of the foregoing, the first is undoubtedly the most important factor. The most severe competition now faced by cooperative creameries comes from other cooperative creameries; the basis of such competition is relative efficiency expressed in terms of prices paid to producers. This tends still further to intensify competition, because where operations are on a net-proceeds basis, all income over costs emerges directly in prices paid.

Since so much emphasis is placed on price, all cooperatives are under pressure to make their prices appear high. Those operating at a competitive disadvantage often resort to practices that obscure their relative efficiency. Such practices tend to perpetuate certain competitive wastes and excessive procurement costs which cooperative creameries were presumed to eliminate.

Participation in benefits and costs.—Participation of patrons in the benefits that cooperative creameries have thus far been able to realize is, with few exceptions, on an equitable basis. This has resulted largely from the fact that the prevailing method of distributing proceeds is based on net returns which places participation in both benefits and costs on a patronage basis. Methods of pooling income from sales are, on the whole, equitable. Methods of allocating expenses, however, frequently are inequitable, mainly because expenses that are not proportional to volume are commonly allocated on the basis of time rather than units of product delivered.

The cooperative creameries have to a remarkable extent adhered to the principle of operating for the benefit of patrons. Such deviations from this principle as have occurred have resulted largely because of the retention of income, in the form of unallocated deduc-

tions and surpluses, for the purpose of liquidating original indebtedness and financing subsequent expansion in business. Where large surpluses occur, an important reason is that members have failed to assume the obligation to finance, and another reason is that the management desires to avoid fixed charges on as large a part of its total capital as possible. Cooperatives, of course, need to establish reasonable reserves, but they should be in the nature of contingent reserves to protect capital rather than surpluses built up for the purpose of financing the organization.

CONCLUSIONS

IT may be concluded that the cooperative creameries have in a large measure achieved the major purposes that prompted dairymen to organize them. Most conspicuous among these are:

1. The elimination of many of the abuses and unethical business practices that prevailed in the local markets.
2. Reduction of margins, largely through reductions in costs of operation resulting from the concentration of larger volumes of business.
3. Quality improvement both with reference to butterfat and butter, as a result of which farmers have received higher prices for butterfat.

Remaining Problems

However, concentration of interest and effort in the solution of the above problems has to a large extent resulted in neglecting other important problems arising largely as a result of shifts in dairy production, improvements in transportation, and other important economic changes. Among the more important problems confronting Iowa dairymen may be mentioned:

(1) *Economic organization of the dairy industry.*—Probably the most important problem confronting the Iowa dairymen today is the establishment of competition among the cooperative creameries upon a rational economic basis. Such a basis involves recognition of the basic principle that the best interest of producers demands that the industry be so organized into processing units and trade areas that the combined cost of manufacturing, procurement, and assembling will be reduced to the minimum.

(2) *Assembling cost.*—An important aspect of the foregoing problem is the economical organization of transportation with a view to reducing the cost of assembling butterfat. This involves not only a concentration of a volume sufficient to minimize manufacturing costs in the smallest practicable area, but it involves such control of trucking operations, either through creamery ownership of trucks or otherwise, as will reduce hauling costs to a minimum. A natural

Other Publications Available

In addition to this circular, the following publications on farmers' cooperative organizations are published by the Farm Credit Administration:

- Cooperative Purchasing of Farm Supplies**
Bulletin No. 1, *J. G. Knapp and J. H. Lister*
- Accounting Principles for Cooperative Cotton Gin Associations,**
Bulletin No. 2, *O. T. Weaver*
- Cooperative Marketing of Agricultural Products**
Bulletin No. 3, *W. W. Fetrow*
- Cooperation in Agriculture, a Selected and Annotated Bibliography,** Bulletin No. 4, *Chastina Gardner*
- Organization and Operation of the Illinois Livestock Marketing Association,** Bulletin No. 5, *H. H. Hulbert*
- Statistics of Farmers' Cooperative Business Organizations, 1920-1935**
Bulletin No. 6, *R. H. Elsworth*
- Cooperative Marketing of Range Livestock**
Bulletin No. 7, *L. B. Mann*
- Mutual Irrigation Companies in California and Utah**
Bulletin No. 8, *Wells A. Hutchins*
- Membership Relations of Cooperative Associations**
Bulletin No. 9, *J. W. Jones*
- Marketing Policies of the California Walnut Growers Association,**
Bulletin No. 10, *Harry C. Hensley and Neil H. Borden*
- Organization and Operating Problems of Nebraska Cooperative Creameries,** Bulletin No. 11, *T. G. Stüts and Gordon C. Laughlin*
- Analysis of the Business Operations of Cooperative Cotton Gins in Oklahoma, 1933-34 Season,** Bulletin No. 12, *Otis T. Weaver and Omer W. Herrmann*
- Transportation of Milk in the Philadelphia Milkshed,**
Bulletin No. 13, *John J. Scanlan*
- Loans to Farmers' Cooperatives,** Circular No. 6
- Early Developments in Cooperative Cotton Marketing**
Circular No. C-101, *O. W. Herrmann and Chastina Gardner*
- Organization and Operation of Cooperative Irrigation Companies**
Circular No. C-102, *Wells A. Hutchins*
- Western Cattle and Sheep Areas,** Circular No. C-103, *L. B. Mann*

These may be obtained while a supply is available from the

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