Some Aspects Of Financial Planning In Agricultural Cooperatives

Edmund R. Barmettler
and
Heinz Spielmann

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FOREWORD

This publication is a report of contributions to Western Regional Marketing Project No. 38, “Financial Management of Agricultural Cooperatives.” The report is, in itself, a contribution to the project. Under the procedures of cooperative publications, this regional report becomes, in effect, a summary publication of the contributions made by each of the cooperating agencies and is mailed under the frank and indicia of each.

The cooperating agencies are the Agricultural Experiment Stations of California, Hawaii, New Mexico, Oregon, Washington, and the Farmer Cooperative Service of the United States Department of Agriculture. Edmund R. Barmettler was formerly Associate Professor of Agricultural Economics at the University of Hawaii, Honolulu, Hawaii, and is presently Professor of Agricultural Economics at the University of Nevada, Reno, Nevada. Heinz Spielmann is Associate Professor of Agricultural Economics at the University of Hawaii, Honolulu, Hawaii.

Contributing Regional Technical Committee Members
Western Marketing Research No. 38

Administrative Advisor:
R. M. Alexander, Oregon State University

Research Committee Members:
E. R. Barmettler, University of Hawaii
G. M. Burke, New Mexico State University
A. H. Harrington, Washington State University
G. E. Korzan, Oregon State University
G. H. Larsen, University of California, Berkeley
J. K. Samuels, United States Department of Agriculture

Cooperative State Research Service:
L. C. Halvorson, United States Department of Agriculture

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CONTENTS

INTRODUCTION .................................................................................. 5
Capital Requirements in Cooperatives ............................................. 6

SOURCES OF CAPITAL FOR AGRICULTURAL COOPERATIVES ............... 9
The Equity-Debt Dilemma ................................................................. 9
How Much Equity? ........................................................................ 14
Amounts and Types of Debt Funds ............................................... 16

EQUITABLE TREATMENT OF MEMBER PATRONS AND IMPLICATIONS FOR FINANCIAL PLANNING IN AGRICULTURAL COOPERATIVES ......................... 19

ALTERNATIVE CREDIT PROCEDURES WITH IMPLICATIONS OF FINANCIAL PLANNING ......................................................... 21

THE IMPORTANCE OF LIQUIDITY IN CAPITAL PLANNING .................... 23

REVOLVING FUND FINANCING—IMPACT ON PLANNING ....................... 26

CONCLUSIONS .................................................................................. 31
The Need for Funds ........................................................................ 31
Cooperative Credit ........................................................................ 31
Funds for Adjustment .................................................................... 32

TABLES

NUMBER
1. Types of equity capital in 217 regional marketing and 105 regional farm supply cooperatives at close of fiscal year 1962 ................................................................. 14
2. Capital sources of 1,157 cooperative marketing and farm supply organizations in 1954 ........................................................................................................... 15
3. Number of cooperative gin associations using each source of capital funds for initial financing in New Mexico in 1962 .......................................................... 16
4. Balance sheet data for 448 regional cooperatives by major function and type of membership at close of fiscal year 1962 ......................................................... 18
5. Total assets of 23 Hawaii cooperative associations (by groups), in thousands of dollars, 1956—1963 ................................................................. 23
6. Current assets as percent of total assets, 23 Hawaii cooperative associations, 1956—1963 ........................................................................................................... 24
7. Analysis of accounts receivable of 23 Hawaii cooperative associations, by groups, 1956—1963 ......................................................................... 25
9. Equity capital of 448 regional farmer cooperatives at the close of fiscal year 1962 ........................................................................................................... 29

FIGURES

NUMBER
1. Current and projected capital mix for a model farm supply cooperative expecting significant sales increases in 10 years ............................................ 10
2. Current and projected capital mix for a model farm supply cooperative expecting significant sales increases in 10 years ............................................ 11
3. Current and projected capital mix for a model farm supply cooperative expecting significant sales increases in 10 years ............................................ 12

3
SOME ASPECTS OF FINANCIAL PLANNING IN AGRICULTURAL COOPERATIVES

Edmund R. Barmettler* and Heinz Spielmann**

In 1784, Daniel Webster said, “Commercial credit is the creation of modern times and belongs in its highest perfection only to the most enlightened and best governed nations. Credit is the vital air of the system of modern commerce. It has done more, a thousand times more, to enrich nations than all the mines of the world.”

INTRODUCTION

This publication attempts to summarize the research of several Western Agricultural Experiment Stations that participated in a research effort entitled, “Financial Management of Agricultural Cooperatives.” The authors have tried to present findings in such a way as to most effectively relate the results to financial behavior of agricultural cooperatives in the United States in general and the Western region in particular.

The broad generalizations made in this summary publication are those of the authors. They are the result of the authors’ effort to interpret the research findings of one, several, or all of the participating experiment station workers. No attempt has been made to give equal space to the studies conducted, nor is there any particular order in which findings of different stations are presented. All contributing studies are used in the presentation.

Analyses of agricultural industry tell of a continued need for capital at all levels of production, precessing, and distribution. Generally, the expectation is that more capital will be needed to facilitate adjustment to changing agricultural conditions in and out of agriculture. It is also expected that vastly increased funds will be needed to finance the growing agricultural technology and the increasing number of services demanded of modern agricultural firms.

Along with the capital requirements imposed by technical innovation, many cooperatives are likely to seek a more dominant role in the economy of the future. To do this, they will need continually increasing financing from both debt and equity sources.

*Edmund R. Barmettler, formerly Associate Agricultural Economist and Associate Professor of Agricultural Economics, Hawaii Agricultural Experiment Station, College of Tropical Agriculture, University of Hawaii, Honolulu, Hawaii; presently Professor of Agricultural Economics, University of Nevada, Reno, Nevada.

**Heinz Spielmann, Associate Agricultural Economist and Associate Professor of Agricultural Economics, Hawaii Agricultural Experiment Station, College of Tropical Agriculture, University of Hawaii, Honolulu, Hawaii.
Capital Requirements of Cooperatives

It was clearly the thinking of the technical committee when this project was initially designed and when the work was completed that "financial management" implies some sort of planning activity. Capital availability from some source and the planned employment of it are a basic function for any type of business activity. Businesses of all types, including cooperatives, must have some investment in assets, as pointed out by G. E. Korzan and E. L. Grey in an Oregon study:

The form or combination that such assets take and the magnitude of assets in total will depend on each firm's individual circumstance. Outside factors contribute as much as, if not more than, internal decisions in determining the need for and availability of resources in a business enterprise.

In a New Mexico study, R. C. Youngberg concludes that:

The increased utilization of capital inputs that has occurred in agriculture when combined with declining prices appears to indicate a growing need for agricultural cooperatives. The individual producer's competitive position demands either that bargaining power with respect to marketing of agricultural commodities must be strengthened, or the cost per unit of output must be reduced in order to successfully continue to operate.

Youngberg points out that increased use of capital has occurred in New Mexico and that cooperatives have remained more or less competitive with non-cooperative enterprises. However, he does not show quantitatively the relationship of financing activity of cooperatives to that of non-cooperative firms. It is probable that these comparative data are not available in New Mexico. What he does show are typical financing methods and sources of funds of New Mexico cooperatives. He comes to his conclusion primarily on an ex post basis. That is, he reviews the earnings of a limited number of New Mexico cooperatives and points out that:

Net margins alone reveal little about the relative financial success of the individual associations, but the realization of a net margin from operations does indicate that the association will continue to be able to operate with an increasing proportion of the association's operation being financed within the membership.

This conclusion does not take into account what the optimum capital investiture might be for even the limited number of cooperative associations studied.

H. E. Erdman and G. H. Larsen view the capital requirement issue more directly. They point out that a cooperative business organization, like any other business entity, needs various kinds of assets as constituent parts of its

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2 Ralph Charles Youngberg. *Organization and Financing of New Mexico Cooperative Associations*. Department of Agricultural Economics, New Mexico State University, University Park, New Mexico, August 1965, p. 4. (A Master of Science thesis.)

3 Youngberg, *op. cit.*, p. 58.
capital mix. Among the classes of assets that make up the total capital mix of cooperatives Erdman and Larsen cite the following:

**LAND AND BUILDINGS**

**EQUIPMENT**
- Office equipment and furniture
- Internal and external machinery and equipment

**SUPPLIES FOR CURRENT OPERATIONS**

**MERCHANDISE** (for purchasing association)

**STOCK**

**FUNDS TO MEET CURRENT OUTLAYS** for such items as payroll, power, water, etc.

**FUNDS TO COVER ANY ADVANCES MADE TO PATRONS** before final settlement

**INVESTMENTS IN AFFAIRS AND/OR SUBSIDIARIES.**

The authors point out that the aggregate of assets found in any operating concern is more than a mere collection. When set in motion by competent employees and coordinated by efficient management, it provides economic services in a continual stream. Because the authors are concerned primarily with revolving fund financing, they address themselves mostly to its developmental history. They do not include much quantitative information except as revolving funds might relate to the total patron equity structure.

> How well the capital funds have been converted into physical assets, how well the physical aggregate is staffed with human operatives, and how well the daily functions are carried on normally determines whether the value of the going concern is more or less than the current book value of the assets separately appraised.\(^4\)

An estimating procedure to evaluate capital requirements was made in the Korzan and Grey study at Oregon.\(^5\) The authors show that the amount of total assets needed to create and support a given amount of sales depends on several factors, the primary one in most cases being the type of commodity handled or service performed. Sales policies and relationships with suppliers and handlers also have a bearing on total assets because they affect accounts receivable and inventory burdens. The authors point out that farm supply cooperatives in Oregon have experienced substantial increases in the cost of doing business over the decade 1955–1964. To keep pace with technological advances and increased mechanization in farming, cooperatives in the northwest have had to provide a broad range of services to patrons and customers alike. This sort of expansion has often made it necessary for the cooperative to purchase complex and expensive equipment and facilities to remain competitive.

The Oregon study uses a projected balance sheet analysis to develop several model plans of capital mix for three types of northwestern cooperatives. For example, it is estimated that an Oregon supply cooperative doing about $600,000 worth of business in 1964–1965 would currently require about


\(^6\) Korzan and Grey, *op. cit.*, pp. 8–22.
$300,000 in assets. By using a growth estimate for Oregon supply cooperatives, it is estimated that in 10 years this same cooperative would require $565,000 in assets or an increase of about 88 percent. Included in this 88-percent increase are a wider range of services to patrons, depreciation allowances, price level changes, and the cost of technological obsolescence. These changes, it is reported, can be explained largely in terms of the growth of the firm and its total assets over the projected period. Cash is estimated to decrease slightly as a proportion of the capital mix, reflecting a gradual reduction in the relative need for liquid funds as the firm increases in size. Cash and other liquid assets are subject to certain minimum requirements which are likely to be relatively large in a small cooperative organization.

Data in a study of Hawaii cooperatives by H. Spielmann and E. R. Barmettler show that growth rates of assets differ with the type of product handled and the length of time the organization has been in business and according to unique requirements for assets in terms of their fixidity. Accounts receivables, it was found, vary more with sales policy rather than with some proportional characteristic of the total capital mix.

Figures 1, 2, and 3 show the estimates projected on a balance sheet of capital mix for three models of Oregon cooperatives.

In projecting future capital requirements, a common measure is the gross sales trend, which can be derived from an analysis of the balance sheet. This is the basis for all three of the model organizations presented above. Also included in the projection are allowances for inflation, growth potential of the market itself, and firm objectives of the cooperative. The last item obviously can only be estimated on the basis of the several firms from which the data for the above models were derived. Nevertheless, firm expectations probably play a very significant role in ultimate growth.

In addition to projecting the amount of available assets, the timing of future drains of capital from the cooperative organization needs to be determined so that a plan for providing funds is possible. The models developed at Oregon do not show this sort of planning. However, it is pointed out in the study that some degree of control can be exerted over a firm’s capital demands if these demands are predicted in advance. These forecasts provide the guidelines for planning capital procurement from alternative sources.

†Heinz Spielmann and Edmund R. Barmettler. Financing Hawaiian Agricultural Cooperatives. Hawaii Agricultural Experiment Station Agricultural Economics Report No. 79. (In press.)
Sources of capital for agricultural cooperatives are discussed by the authors in terms of ways in which cooperatives seek and secure their required funds. Also discussed is how cooperatives build and maintain that combination of assets constituting the resource aggregate known as the cooperative.

It was noted earlier that increasing innovation in the agricultural (production and marketing) sector of the economy will force increased capital acquisitions from alternative sources. If agricultural cooperatives are to serve an increasingly important role in the future, they, too, will be seeking to acquire more funds. There are two basic sources for such funds. They may originate from the cooperative itself or they may be borrowed. The problem, however, is more complex. More than the usual accounting comparison of equity dollars against borrowed dollars is involved here. In particular, patron or membership equity may or may not be cooperative equity. For example, capital assets held in the form of evidences of ownership, such as finance fund certificates with maturity status, may or may not be held by patrons. Even if they are held by patrons of the cooperative, the certificates do not necessarily represent corporate equity; they may, however, be regarded as liabilities of the cooperative. Some finance fund certificates might be classified as venture capital, but most of these, as well as membership fees, common stock, preferred stock, and a variety of other forms of forced patron investment, may be considered evidence of membership equity.

The Equity-Debt Dilemma

One of the traditional problems of cooperatives has been the development of appropriate sources for funds. Funds may be generated within the cooperative by a variety of methods—from earnings, by tapping the patron member for contributions through legal retains, or through purchases of equity certificates of one form or another.

Non-patron sources of funds are also attractive to the cooperative association and to individual patrons, particularly to those patrons who are approaching the limits of their borrowing capacity or to those who have access to investment alternatives on or off the farm superior to the marginal benefits attainable in further cooperative investment. The patron with superior investment alternatives is likely to bargain with the cooperative for differential benefits as a price for securing his funds. The cooperative must be able to offer the patron member returns at least comparable to his alternative investment opportunities if it hopes to continue to attract member financial support.

In the long run, this sort of bargaining by the more financially able, and probably the more successful farmers, tends to obscure the benefits of cooperative participation. The patron is likely to see little if any difference between participating in his cooperative and participating in proprietary firms.

The arguments usually advanced by cooperative leaders have been of two sorts; first, that member patrons should have the majority of capital in the cooperative if they wish to retain control over their association; and second, that members must have some minimum amount of their own funds in the

9
Figure 1. Current and projected capital mix for a model farm supply cooperative expecting significant sales increases in 10 years.

Sales of the Model Association:
Period I — $600,000
Period II — $870,000

$565,000

Current liabilities
10% $56,500

Long-term borrowed capital
20% $113,000

Revolving fund capital
20% $113,000

Reserves (unallocated)
5% $28,250

Preferred stock and/or certificates of equity
30% $169,500

Common stock (or membership fees)
15% $84,750

Period I
Now

Period II
10 years from now

$30,000
10%

$45,000
15%

$75,000
25%

$30,000
10%

$45,000
15%

$75,000
25%
Figure 2. Current and projected capital mix for a model farm supply cooperative expecting significant sales increases in 10 years.

Sales of the Model Association:

<table>
<thead>
<tr>
<th>Period</th>
<th>Million Bu.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>II</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Sales of the Model Association:

<table>
<thead>
<tr>
<th>Period I</th>
<th>$900,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>$45,000</td>
</tr>
<tr>
<td>5%</td>
<td>$45,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Period II</th>
<th>$1,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>$50,000</td>
</tr>
<tr>
<td>15%</td>
<td>$150,000</td>
</tr>
<tr>
<td>70%</td>
<td>$700,000</td>
</tr>
<tr>
<td>10%</td>
<td>$100,000</td>
</tr>
</tbody>
</table>

- Current liabilities: 5% $50,000
- Long-term borrowed capital: 15% $150,000
- Revolving fund: 70% $700,000
- Common and preferred stock: 10% $100,000

Period I:
- Now

Period II:
- 10 years from now
Sales of the
Model Association:
Period I — $1,000,000
Period II — $ 750,000

$300,000

15% $ 45,000 Current liabilities $262,500

10% $ 30,000

10% $ 30,000

55% $165,000

10% $ 30,000

Long-term borrowed capital

Reserves

Revolving fund

Preferred and common stock

Period I
Now

Period II
10 years
from now

15% $ 39,375

10% $ 26,250

10% $ 26,250

55% $144,375

10% $ 26,250

Figure 3. Current and projected capital mix for a model farm supply cooperative expecting significant sales increases in 10 years.
joint venture to provide enough collateral for non-member lenders who furnish the additionally needed funds. The two arguments are not mutually exclusive. That is, member patrons may not choose to keep or hold control of a particular bundle of capital assets involved in a given cooperative. If they choose to do so, however, they might still have to supply enough of their own funds to interest outside investment sufficient to hold the corporate resources together for the successful operation and continued maintenance of the joint venture.

How much control cooperative patron members should exert through ownership of assets may depend upon a variety of subordinate issues. For example, if the cooperative is a local organization and if the value of its total assets is relatively low, equity capital may indeed be vital. On the other hand, if this same local cooperative operates a plant or a facility unique to a particular operation and fulfills the purpose for which it was formed, then it would hardly matter who owns it so long as the resource continues to be available to the patron. The patron might very well develop a sort of equi-marginal rationale that so long as his funds return equal or superior returns (on or off the farm) his choice will be toward the superior alternative. It may also be that the cooperative association can secure both long- and short-term credit cheaper than the farmer. In this case, the patron member benefits from having both reduced credit costs and additional funds for needed farm capital or operational investment.

Where the aggregate of capital assets is large, the farmer patron may very well ask whether a financial interest in the cooperative is necessary to provide him with the services needed. He may raise another question, namely, if services are available elsewhere will equity investment in the cooperative return more or less than the cost difference in purchasing services at other facilities? Farmers do not operate to support cooperatives but to secure benefits from farming. The only real justification for the farmer to patronize or join a cooperative is that economic or some other benefits are realized from such patronage or membership. Erdman and Larsen address themselves to this very issue as follows:

It may be asked how a going concern in the business world attracts capital. The answer is by offering the inducements of safety, convenience and income. The first question the investor is likely to ask concerns safety of the funds he is putting at another's disposal. Even if backed by pledged assets, such assets must be protected from fire, theft or other hazards and must be readily available should it become evident that the principal is gone. A second question involves convenience—the amount of supervision needed and the possibility of retrieving the funds when changing circumstances place the lender in need of money. A third question involves the returns on investment—interest, dividends, or appreciation. In spite of the notion that paying interest on cooperative securities is literally 'paying ourselves interest', there are many circumstances in which a lack of such payment sends capital elsewhere. Complaints that farmers do not give adequate financial support to given cooperatives may reflect poor promotion, but it is more likely that in such areas the securities offered are not good investments by generally accepted standards.

*Erdman and Larsen, op. cit., pp. 74-75.*
How Much Equity?

There are no clear-cut answers to the equity-debt ratio question. Accountants are considerably more in agreement than economists that some sort of standard quantitative relationship exists between equity and debt. A study of 448 regional farmer cooperatives by N. Griffin of the Farmer Cooperative Service shows that in 414 of the cooperatives studied equity assets amounted to 56.9 percent of total assets and liabilities amounted to 43.1 percent. About 13.4 percent of capital structure were term and 29.7 percent were current liabilities. The total assets of the 414 regional cooperatives amounted to $2.6 billion.

The structure of investment, or the capital mix, of 217 regional marketing cooperatives and 105 regional farm supply cooperatives is shown in Table 1.

<table>
<thead>
<tr>
<th>Types of equity capital</th>
<th>Marketing (217)</th>
<th>Farm supply (105)</th>
<th>Average (322)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PERCENT</td>
<td>PERCENT</td>
<td>PERCENT</td>
</tr>
<tr>
<td>Preferred stock</td>
<td>13.7</td>
<td>37.7</td>
<td>21.9</td>
</tr>
<tr>
<td>Common stock</td>
<td>10.8</td>
<td>28.5</td>
<td>19.0</td>
</tr>
<tr>
<td>Allocated reserves</td>
<td>30.0</td>
<td>12.4</td>
<td>23.9</td>
</tr>
<tr>
<td>Unallocated reserves</td>
<td>7.6</td>
<td>11.0</td>
<td>8.1</td>
</tr>
<tr>
<td>Certificates of equitya</td>
<td>27.1</td>
<td>4.4</td>
<td>17.5</td>
</tr>
<tr>
<td>Certificates of equityb</td>
<td>10.6</td>
<td>3.8</td>
<td>8.5</td>
</tr>
<tr>
<td>Other equity capital</td>
<td>0.2</td>
<td>2.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

| Value of assets         | $677 millionc | $553 million     | $1,230 milliond |

a Certificates of equity without maturity dates.
b Certificates of equity with maturity dates.
c Excludes tobacco marketing groups.
d Total assets regional marketing and supply cooperatives.


In an earlier report by the Farmer Cooperative Service a similar analysis is presented for 1,157 marketing and supply cooperatives. The 1954 capital sources are presented in Table 2. It is notable that in comparing the percentages of common and preferred stock certificates in 1954 and 1962 in terms of their relative position in the equity structure, almost no change is evident.

Farmers, like all businessmen, are individually different. There appears to be no clear-cut rule to describe their financial behavior. It may be proper to say that the modern cooperative member patron is motivated in the same way as all businessmen. First and perhaps foremost among these motives is business survival. In a New Mexico study, G. M. Burke, M. C. Scott, and C. R. Hall report that out of 20 cooperatively operated cotton gins all but one were originally owned by individuals; also, that a trend toward purchasing private cotton gins by New Mexico cooperative associations was begun in the 1930's. The reasons for purchasing were several, including losses in business volume by the private firms, growers' interest in reducing the cost of ginning, and the need for improving services at all levels of post-harvest cotton operations. It may be said that the three reasons listed above were financial gain-oriented. However, it seems equally reasonable to suppose that the trend indicates producer interest in the survival of his own farm operations. The second viewpoint implies that farmers generally were faced with a crisis involving the disappearance of privately owned cotton gins. Each of the three motives referred to earlier suggests that serious maladjustments for cotton growers would have resulted if they had not taken steps to perform the cotton ginning activities. However, the New Mexico study reports that only in one case did producers supply all of the funds necessary for the purchase of the original capital.

Table 2. Capital sources of 1,157 cooperative marketing and farm supply organizations in 1954

<table>
<thead>
<tr>
<th>Type of equity capital</th>
<th>Percent using source</th>
<th>Percent of total equity capital</th>
<th>Interest paid to members on equity capital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PERCENT</td>
<td>PERCENT</td>
<td>None</td>
</tr>
<tr>
<td>Common stock</td>
<td>19.2</td>
<td>51.0</td>
<td>6.4</td>
</tr>
<tr>
<td>Preferred stock</td>
<td>21.9</td>
<td>30.7</td>
<td>15.4</td>
</tr>
<tr>
<td>Certificates of equity</td>
<td>4.1</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td>Allocated capital reserves</td>
<td>39.1</td>
<td>77.7</td>
<td>3.4</td>
</tr>
<tr>
<td>Unallocated reserves</td>
<td>10.1</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>Membership certificates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous equity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b Percent of 1,157 cooperatives using each type source for developing equity position.
c Percent of total amount of equity capital produced by the selected sources.
d Equity certificates with maturity dates.
e Allocated capital credits without maturity dates.
f Included 1954 net margins.

Gerald M. Burke, Marshall C. Scott, and Carl R. Hall. _Equity Among Members of Cotton Gin Cooperatives_. Agricultural Experiment Station Bulletin 501, New Mexico State University, University Park, New Mexico, July 1965.
resources. Three of the cooperatives were financed entirely by the previous owners, six borrowed from the regional bank for cooperatives, and four out of the latter six secured all of their initial capital from the bank for cooperatives. Five associations sold stock, and four out of these five used stock sales exclusively to raise the necessary funds.

Table 3 shows sources of funds for the 20 cotton gin organizations at the time of their origin. For operating funds, the New Mexico study reports, most of the cooperative gins initially secured credit from local banks. However, in more recent years, about half of the cooperative gins borrowed operating funds from the regional bank for cooperatives. About 25 percent still use local commercial banks, about 15 percent do their own financing, and about 10 percent use dealer credit.

**Amounts and Types of Debt Funds**

Debt capital has certain points in its favor. Borrowed funds can often be obtained at a rate of interest lower than the dividend rate required to attract equity funds. Ownership control of the firm need not be sacrificed for new or additional funds, and the principle of financial leverage (trading on equity) can be applied to cooperative organizations as well as to the proprietary corporation. There are, however, some important restraints on management's ability to be flexible in making financial decisions. A. Haseley and L. Garoian make the following point concerning these restraints:

First and foremost, the amount and stability of earnings sets the foundation for all negotiations for long term capital. Second, management will seek flexibility to maneuver in the event of unexpected change. Third, trading on equity is limited by the fact that the investor's appraisal of the quality of debt declines as the proportion of debt rises.

**TABLE 3. Number of cooperative gin associations using each source of capital funds for initial financing in New Mexico in 1962**

<table>
<thead>
<tr>
<th>Source of capital funds</th>
<th>Total number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous owner</td>
<td>8</td>
</tr>
<tr>
<td>Wichita Bank for Cooperatives</td>
<td>6</td>
</tr>
<tr>
<td>Stock sales</td>
<td>5</td>
</tr>
<tr>
<td>Patrons</td>
<td>4</td>
</tr>
<tr>
<td>Local banks</td>
<td>1</td>
</tr>
<tr>
<td>Other corporations</td>
<td>1</td>
</tr>
<tr>
<td>Pledges</td>
<td>1</td>
</tr>
<tr>
<td>Gin leased by co-op</td>
<td>1</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>27</strong>^a</td>
</tr>
</tbody>
</table>

^a The number of associations totals 27 because some of the 20 associations used more than one method of financing.
The precise contractual nature of debt-servicing costs and the possibility that earnings will not remain stable and at a satisfactory level create the need for relative risk considerations in choosing between debt and equity capital. While the direct costs of borrowed funds may be less than estimated alternative costs for an equal amount of equity capital, the advantage can be more than offset by the risk of default. Obligations to investors are binding, whereas owners can forego profits or even sustain losses in the event of a sudden decrease in earnings.

Perhaps the only really successful argument against the Haseley-Garoian proposition is that in cooperatives continued membership participation may or may not be fixed by specific contractual arrangements. Cooperatives are always under pressure to be competitive with other forms of businesses that serve agriculture. The cooperative must, it if hopes to continue to develop and grow, provide services to members at competitive costs. However, if the cooperative does not maintain contractual relationships with its members, it is likely that membership patronage will be seriously stressed. During times of serious price fluctuations, particularly if the cooperative is slow in adjusting to changing price relationships, the membership may look to entrepreneurial businesses or other cooperatives for more stability.

Erdman and Larsen, in addressing themselves to the question of membership equity-debt ratio, conclude that there is no magic equity-debt ratio which neatly answers the question. They point out that the association might want to have enough equity dollars invested to encourage lenders to make loans to the organization and still maintain control in the hands of patrons. They also suggest that the equity-debt ratio may vary not only among different types of organizations but also in the types of debt funds borrowed. In the Farmer Cooperative Service study cited earlier, the equity-debt relationship is presented in tabular form. The summations of these findings are shown in Table 4. It is notable in the table that in practice, cooperatives tend to hold over 50 percent of net worth. The exception is in the centralized organizations, where the current liability of tobacco centrals causes the net worth to fall below the 50-percent level.

Table 4 does, however, show significant differences in the types of borrowed funds used by different types of cooperatives and, when taken collectively, by federated and centralized organizations.

Spielmann and Barmettler found that in Hawaii in 1963, the aggregate relationship of owner equity to total capital was such that associations in the sample held 50.2 percent of assets in the form of cash equity. However, only two of five groups studied had equity capital holdings greater than borrowed funds. Moreover, they found that Hawaiian cooperative associations have experienced a gradual decline of aggregate-owned equity in relation to total assets, from 59.3 percent in 1956 to 50.2 percent in 1963.

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12 Erdman and Larsen, *op. cit.*, p. 75.
13 Griffin, *op. cit.*, p. 11, Table 4.
14 Spielmann and Barmettler, *op. cit.*
Table 4. Balance sheet data for 448 regional cooperatives by major function and type of membership at close of fiscal year 1962a

<table>
<thead>
<tr>
<th>No.</th>
<th>Assets, 1,000 $</th>
<th>ASSETS</th>
<th></th>
<th>LIABILITIES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Current</td>
<td>Fixed</td>
<td>Other</td>
<td>Term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PERCENT</td>
<td>PERCENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm supply</td>
<td>105</td>
<td>867,381</td>
<td>45.4</td>
<td>39.4</td>
<td>15.2</td>
</tr>
<tr>
<td>Centralized</td>
<td>22</td>
<td>165,480</td>
<td>55.8</td>
<td>34.1</td>
<td>10.1</td>
</tr>
<tr>
<td>Federated</td>
<td>59</td>
<td>508,420</td>
<td>42.3</td>
<td>41.9</td>
<td>15.8</td>
</tr>
<tr>
<td>Mixed Membership</td>
<td>24</td>
<td>193,481</td>
<td>44.6</td>
<td>37.6</td>
<td>17.8</td>
</tr>
<tr>
<td>Marketing</td>
<td>217</td>
<td>1,273,533</td>
<td>57.4</td>
<td>34.3</td>
<td>8.3</td>
</tr>
<tr>
<td>Centralized</td>
<td>113</td>
<td>563,655</td>
<td>58.2</td>
<td>32.9</td>
<td>8.9</td>
</tr>
<tr>
<td>Federated</td>
<td>77</td>
<td>509,126</td>
<td>55.8</td>
<td>36.0</td>
<td>8.2</td>
</tr>
<tr>
<td>Mixed Membership</td>
<td>27</td>
<td>200,752</td>
<td>59.6</td>
<td>33.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Marketing—Tobacco</td>
<td>34</td>
<td>386,299</td>
<td>97.7</td>
<td>1.9</td>
<td>0.4</td>
</tr>
<tr>
<td>Diversified</td>
<td>24</td>
<td>325,506</td>
<td>51.0</td>
<td>33.8</td>
<td>15.2</td>
</tr>
<tr>
<td>Centralized</td>
<td>12</td>
<td>98,551</td>
<td>51.7</td>
<td>40.9</td>
<td>7.4</td>
</tr>
<tr>
<td>Federated</td>
<td>6</td>
<td>120,592</td>
<td>49.5</td>
<td>30.6</td>
<td>19.9</td>
</tr>
<tr>
<td>Mixed Membership</td>
<td>6</td>
<td>106,363</td>
<td>52.0</td>
<td>30.9</td>
<td>17.1</td>
</tr>
<tr>
<td>Bargaining</td>
<td>50</td>
<td>138,831</td>
<td>58.4</td>
<td>30.1</td>
<td>11.5</td>
</tr>
<tr>
<td>Centralized</td>
<td>43</td>
<td>135,676</td>
<td>58.6</td>
<td>30.2</td>
<td>11.2</td>
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<tr>
<td>Federated</td>
<td>5</td>
<td>2,165</td>
<td>54.7</td>
<td>16.8</td>
<td>28.5</td>
</tr>
<tr>
<td>Service</td>
<td>18</td>
<td>3,919</td>
<td>43.1</td>
<td>5.0</td>
<td>51.9</td>
</tr>
<tr>
<td>Centralized</td>
<td>1</td>
<td>115</td>
<td>100.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Federated</td>
<td>15</td>
<td>2,849</td>
<td>23.0</td>
<td>6.3</td>
<td>70.7</td>
</tr>
<tr>
<td>Mixed Membership</td>
<td>2</td>
<td>955</td>
<td>96.3</td>
<td>1.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Totalb</td>
<td>448</td>
<td>2,995,469</td>
<td>58.5</td>
<td>31.3</td>
<td>10.2</td>
</tr>
<tr>
<td>Centralized</td>
<td>225</td>
<td>1,349,776</td>
<td>68.8</td>
<td>23.9</td>
<td>7.3</td>
</tr>
<tr>
<td>Federated</td>
<td>162</td>
<td>1,143,152</td>
<td>49.0</td>
<td>37.9</td>
<td>13.1</td>
</tr>
<tr>
<td>Mixed Membership</td>
<td>61</td>
<td>502,541</td>
<td>52.3</td>
<td>35.0</td>
<td>12.7</td>
</tr>
</tbody>
</table>


b Calculated from tabular materials presented in Report 133 above. If tobacco centrals are excluded net worth of 191 centralized cooperatives would be about 69 percent and the overall average for 414 cooperatives 56.3 percent.
EQUITABLE TREATMENT OF MEMBER PATRONS AND IMPLICATIONS FOR FINANCIAL PLANNING IN AGRICULTURAL COOPERATIVES

In a discussion on the principles of limited returns to capital, Spielmann makes two points which should be kept in mind when considering equitable member patron relationships:

1. Members invest funds in their cooperatives primarily to facilitate services and not to attain entrepreneurial income.

2. Interest payment to member patrons represents an expense to the cooperative association and is allocated among the membership in proportion to the use each member makes of the cooperative’s services.

Spielmann goes on to say:

The payment of interest on investment in a cooperative association has primarily the function of alleviating certain inequities that may arise where member participation is heterogeneous in nature and member capital contributions are disproportionate. A cooperative association which does not follow the principle of proportionality will need to pay interest on capital invested by its members in order to create a more equitable distribution of the costs and responsibilities of participation among them.

Assume an association where a number of members contribute disproportionately more capital than the remainder. In effect, members who contribute less than their proportionate share of capital to their associations borrow from those who contribute more than their proportionate share. It is only equitable that the former group compensates the latter group for the use of borrowed funds. However, the rate of interest which the latter group is permitted to charge is generally limited either in the by-laws of the association or by federal or state laws. The Copper-Volstead Act of 1922 prescribes an eight percent limit on member investment (provided the association does not adhere to the ‘one man-one vote’ principle).

The main purpose of limiting interest rates is to prevent profit-making ventures by member investors in the operation of the cooperative, and, also, to distribute the burden of financing more equitably over the whole service-using membership.

Erdman and Larsen also deal with the question of equitable treatment of member patrons, but more from the point of view of member willingness to invest. This point of view seems to constitute the “other side of the coin” when compared with Spielmann’s arguments. They point out:

The assertion that farmers have not been willing to provide enough capital to their associations inevitably raises the question, difficult to answer, of the proportion of total capital which patrons must supply if they wish to

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stay in the driver’s seat. The answer depends to a considerable extent on circumstances. Assuming the patrons want to keep the organization in their control, they must provide the major risk capital. Obviously, members should contribute enough equity to give lenders a safe margin to provide the rest. It must be emphasized that just what that means follows no fixed rate.\textsuperscript{16}

Erdman and Larsen furthermore consider the question of equitable treatment as part of the effect of the total environment on a given patron. The question of alternative on-farm fund allocation as compared with off-farm cooperative investment may be influenced by a number of factors having little to do with equitable treatment. An individual producer who has significant farm capital requirements but who is already extended to the limits of his credit may not be overly enthusiastic about investment in the cooperative even if a maximum rate of interest is paid. From the economic point of view, this individual may very well be willing to pay a higher price for goods and services if his investment dollars generate enough additional income, not only to offset price differences, but also to accrue interest. In the final analysis, interest payment here is simply part of the cooperative savings bargain that the member must consider as an alternative in comparing the marginal return to his available dollars. The same rationing of investment funds may not face all members of the cooperative. Some of the well-established member patrons may find investment in the cooperative a very sound haven for their savings or surplus funds, and, therefore, disproportionate investment could be justified. Equitable treatment in this instance may be considered dependent on the kinds of investment risks involved and on the rate of interest required to attract member funds that have not been invested.

The idea that patron members should invest in their own organization on the basis of some prorate of use has often been supported because it is supposed that a financial stake in the organization fosters loyalty. In the discussions presented both by Spielmann and by Erdman and Larsen the concept that member loyalty is strengthened from financial participation is challenged. The view expressed is that loyalty must be more realistically considered as a function of real and potential benefits to be derived from membership.

Equitable treatment of member patrons has other issues than a fair-share return on capital contribution. Among these are voting rights, participation in decision making, and investment retirement, including transfer of ownership rights upon retirement from farming or upon death. These sorts of equity issues were part of a study at New Mexico of 20 cooperative cotton gins.\textsuperscript{17} The attempt was to determine the policy of the 20 gins concerning:

1. Termination of membership due to death.
2. Termination of membership for other reasons (e.g., quit farming).
3. Inequities between new and old members.

The study showed that 15 of the 20 cooperatives made no provision for retiring member equity in cases of termination of membership. In the case

\textsuperscript{16} Erdman and Larsen, \textit{op. cit.}, p. 75.

\textsuperscript{17} Burke, Scott, and Hall, \textit{op. cit.}, pp. 13-16.
of inequities between new and old members, it was pointed out that inequities could be reduced if interest payment were made on equity shareholdings of the cooperative. Those patrons who hold revolving investment longer than others, such as newcomers, should be compensated for the disproportionality of their total equity holdings in the cooperative. However, this does not resolve the problem of the preferences of individual patrons as far as investment liquidity and allocation alternatives are concerned.

The financing implication of equity investment of retiring or discontinuing members is that in many instances the total capital bundle would have to be increased by maintaining reserves or by borrowing. In either instance, additional stress would be placed on those associations already near the end of their credit or fund-raising limits.

ALTERNATIVE CREDIT PROCEDURES WITH IMPLICATIONS ON FINANCIAL PLANNING

Spielmann addresses himself directly to the question of credit procedure in his dissertation. The problems of credit most implicated in financial planning by cooperatives involve liquidity position and operating fund sources.

The relatively heavy demand by their members for various types of credit, the increasing evidence of vertical integration and the rapid changes in today's technology and economy have made it incumbent upon marketing and supply cooperative associations to maintain a more liquid financial position than was necessary prior to World War II. In order to meet these needs, some of the associations are now engaged in various methods which are designed to prevent a too rapid drainage or tying up of operating capital through large accounts receivable, the acquisition of new facilities and the replacement of obsolete machinery.  

He points out three basic types of plans designed to meet the credit needs of the associations and their members.

1. The association assists its members to obtain credit through facilities outside the cooperative in order to contain the size of the association's accounts receivable.
2. A number of cooperative associations combine in order to set up a credit corporation expressly charged with meeting the credit demands of members of these associations.
3. A federation of cooperative associations form a credit corporation to provide suitable funds to each member association for the establishment of long-term facility loans.

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18 Spielmann, *op. cit.*, p. 228.
Each of these plans is designed to help cooperative associations in their endeavor to keep liquid fund employed solely for operational rather than credit purposes. In the first plan, Spielmann cites at least four benefits to be derived from direct lines of credit obtained through production credit associations. The cooperative association in this instance functions as a credit middleman:

1. The whole transaction is contained within the association. The members need not shop around or seek other agencies to obtain their credit.
2. Securing credit for individual member patrons may cost less when it is done as a coordinated activity through the cooperative, than when patrons negotiate directly with the Production Credit Association or with a commercial bank. The cooperative association is likely to have better knowledge of the member’s credit needs and the probable risks of making a loan to the patron.
3. Credit is probably extended more readily to farmers in the higher-risk categories, since it would be possible, in some situations, to hypothecate products marketed to satisfy outstanding P.C.A. loans. In essence, the member in the higher-risk category would subject himself to a more rigid supervision of his financial operations. When a *bona fide* contractual relationship exists between the member and his cooperative, this sort of supervision is accomplished at a very low percent of credit cost.
4. Long-range member credit is probably more readily established since the credit requirements, financial responsibility, and operational efficiency of the potential member borrower are better understood by the cooperative association. Whereas individual members may be faced with renegotiations annually when dealing directly with some credit sources, the cooperative association can provide credit service on an ongoing basis with a minimum amount of patron effort and a relatively low real cost.

The practical impact of this sort of arrangement is that credit is made available to patrons on a par with competing establishments. The beneficial function of the cooperative is also enhanced since this service may be added to existing service activities without materially increasing the operating costs of the cooperative. Finally, the liquidity position of the cooperative association is probably improved since large amounts of funds need no longer be reserved for patron borrowers.

No specific benefits are cited for the second plan. However, the suggestion is that this arrangement successfully helps avoid the necessity for individual cooperatives to maintain large liquid reserves. Moreover, these credit corporations are in a position to offer considerable savings to an association and its members through their superior lending ability and through efficiency in fund management. The bank for cooperatives is involved in this type of plan as an indirect participant of the credit corporation in that it extends a line of credit to the individual member cooperatives.

The third plan, used by northwestern cooperatives, is unique in that it entails the formation of various local cooperatives into a federation that sets
up its own real estate and development corporation. This corporation is usually financed by some private investment firm, such as an investment bank or an insurance company. The attempt here is to tap the money market more directly and thereby avoid the necessity of tying up large quantities of funds in fixed assets. In this plan, the local associations would sell all of their real estate property and facilities to the real estate corporation of their federation. The real estate and development corporation leases the property back to the locals on a long-term lease and reimburses part of the proceeds of the investment firm and retains a part for its own further development. Eventually, it is expected that the federation would become independent of outside investment, if that is in its best interest.

THE IMPORTANCE OF LIQUIDITY IN CAPITAL PLANNING

Thus far, it has been shown how various credit plans contribute to maintaining capital liquidity in cooperative associations. It now remains to discuss the liquidity preferences among different types of cooperatives. As pointed out earlier, small associations tend to have a higher liquidity preference than their large counterparts. In the Hawaii study, which necessarily used relatively small associations in its sample, Spielmann and Barmettler found support for this contention, that a high ratio of current assets to fixed assets would indicate a high liquidity preference.

The Hawaii study\(^{19}\) showed that the total asset position of all associations increased from 1956 to 1963, following lines similar to the models developed by Korzan and Grey.\(^{20}\) Meat, poultry, and dairy associations showed the largest expansion (Table 5).

Table 5. Total assets of 23 Hawaii cooperative associations (by groups), in thousands of dollars, 1956–1963

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit and vegetable</td>
<td>100.6</td>
<td>126.8</td>
<td>119.3</td>
<td>159.8</td>
<td>156.2</td>
<td>158.6</td>
<td>207.4</td>
<td>184.2</td>
<td>+83.1</td>
</tr>
<tr>
<td>Produce and purchasing</td>
<td>313.2</td>
<td>295.4</td>
<td>313.7</td>
<td>312.4</td>
<td>376.0</td>
<td>417.6</td>
<td>461.6</td>
<td>445.4</td>
<td>+42.2</td>
</tr>
<tr>
<td>Meat, poultry, dairy</td>
<td>481.3</td>
<td>528.7</td>
<td>815.2</td>
<td>1,225.8</td>
<td>1,599.4</td>
<td>1,445.5</td>
<td>1,585.4</td>
<td>1,774.2</td>
<td>+268.6</td>
</tr>
<tr>
<td>Coffee</td>
<td>144.8</td>
<td>267.6</td>
<td>228.0</td>
<td>298.2</td>
<td>346.4</td>
<td>303.8</td>
<td>270.7</td>
<td>294.3</td>
<td>+103.2</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>147.6</td>
<td>199.7</td>
<td>147.8</td>
<td>167.1</td>
<td>157.1</td>
<td>181.0</td>
<td>173.5</td>
<td>185.0</td>
<td>+25.3</td>
</tr>
</tbody>
</table>

\(^{19}\) Spielmann and Barmettler, \textit{op. cit.}

\(^{20}\) Gerald E. Korzan and Edward L. Grey, \textit{Capital for Growth and Adjustment of Agricultural Cooperatives}. Agricultural Experiment Station Bulletin 596, Oregon State University, Corvallis, Oregon, November 1964. (From J. H. Bonneville and others organizing and financing business.)
Most of the assets in the 23 Hawaii cooperative associations may be classified as current. During 1956–1963, current assets made up 95.6 percent of total assets in the fruit and vegetable marketing groups, 82.9 percent in the produce and purchasing groups, 98.5 percent in the coffee cooperatives, and 83.6 percent in miscellaneous associations.

The meat, poultry, and dairy groups showed the smallest ratio of current-to-fixed assets. In this group, current assets accounted for 61 percent of all assets. The reason for this is that specialized fixed resources are needed, such as processing plants, special equipment, and land. Table 6 shows current assets as percent of total assets for 23 cooperatives in Hawaii from 1956 to 1963.

Table 6. Current assets as percent of total assets, 23 Hawaii cooperative associations, 1956–1963

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit and vegetable</td>
<td>94.3</td>
<td>94.9</td>
<td>95.3</td>
<td>95.4</td>
<td>97.6</td>
<td>96.2</td>
<td>95.3</td>
<td>95.4</td>
<td>95.6</td>
</tr>
<tr>
<td>Produce and purchasing</td>
<td>80.8</td>
<td>80.6</td>
<td>82.1</td>
<td>83.1</td>
<td>85.4</td>
<td>86.2</td>
<td>80.9</td>
<td>84.4</td>
<td>82.9</td>
</tr>
<tr>
<td>Meat, poultry, dairy</td>
<td>64.4</td>
<td>68.3</td>
<td>52.3</td>
<td>44.7</td>
<td>56.0</td>
<td>60.9</td>
<td>61.3</td>
<td>62.0</td>
<td>58.7</td>
</tr>
<tr>
<td>Coffee</td>
<td>99.9</td>
<td>99.7</td>
<td>99.6</td>
<td>99.1</td>
<td>98.6</td>
<td>97.9</td>
<td>97.3</td>
<td>96.2</td>
<td>98.5</td>
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<tr>
<td>Miscellaneous</td>
<td>91.0</td>
<td>89.0</td>
<td>80.2</td>
<td>82.6</td>
<td>82.0</td>
<td>83.6</td>
<td>81.4</td>
<td>78.7</td>
<td>83.6</td>
</tr>
</tbody>
</table>

The high ratio of current-to-fixed assets in the Hawaii cooperatives is indicative of extensive leasing practices, particularly leasing of space, buildings, and transportation equipment. This high ratio is partly accounted for by the maintenance cost of fixed assets that were fully depreciated in various capital accounts but had not been replaced.

The relative lack of fixed assets has both favorable and unfavorable effects. By leasing space and equipment, associations avoid tying up large sums of scarce funds over extended time periods. This greater liquidity offers cooperatives more flexibility in their operations over the short run and reduces the necessity for equity fund contributions from already fund-short member patrons. It has the further effect of reducing the need for long-term borrowed funds which, along with member funds, would be needed to purchase space and equipment.

On the other hand, liquidity of the sort described does not come without cost. Those associations with higher fixed capital ratios, particularly those with relatively large investments in real estate, often stand to gain from increasing land prices. In Hawaii this may be particularly relevant. Also, associations with a low base of fixed capital resource often find it difficult to borrow long-term funds for capital improvements and for expansion activities.
It was evident in the Spielmann and Barmettler study that current assets in Hawaii are generally made up of cash and accounts receivable. The study showed that during 1956–1963 cash and accounts receivable accounted for 61 percent of the total assets in fruit and vegetable cooperatives; 52 percent in the produce and purchasing groups; 49 percent in the meat, poultry, and dairy groups; 91 percent in the coffee cooperatives; and 71 percent in the miscellaneous groups. The account next most important to cash and accounts receivable was the product or supply inventory.

Since accounts receivable are an important part of total and current assets, an effort was made by the Hawaii investigators to determine how receivables are managed by the different types of cooperatives. To ascertain the age of accounts receivable, the ratio of accounts receivable to total sales was simply multiplied by the number of business days of a year.

\[
\text{Accounts receivable} \times \frac{\text{Business days of the year}}{\text{Total sales}}
\]

In this way, the average number of business days during which accounts receivable remain outstanding was found. Table 7 indicates the characteristic liquidity of these accounts for Hawaii cooperatives from 1956 to 1963.

It is evident from Table 7 that these cooperative organizations were effective in collecting receivables on time. The 52-day average among produce and purchasing associations indicates that the normal terms of trade is for payment within a 60-day period. In the coffee cooperatives it may be concluded that 30 days is the normal term of trade; however, it might also have resulted from the serious price break that occurred for coffee after 1958, therefore making collection somewhat more difficult.

**Table 7. Analysis of accounts receivable of 23 Hawaii cooperative associations, by groups, 1956–1963**

<table>
<thead>
<tr>
<th>Association groups</th>
<th>Average number of days accounts receivable were outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit and vegetable</td>
<td>40</td>
</tr>
<tr>
<td>Produce and purchasing</td>
<td>60</td>
</tr>
<tr>
<td>Meat, poultry, dairy</td>
<td>24</td>
</tr>
<tr>
<td>Coffee</td>
<td>10</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>24</td>
</tr>
</tbody>
</table>

A further indicator of liquidity preference is the relationship of liquid capital to operational costs. The Hawaii study\(^2\) showed, for example, that as the size of cooperatives in terms of their activity increases the need for

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\(^2\) Spielmann and Barmettler, *op. cit.*
liquidity is lessened. Thus, by relating costs to the business activity or the sales volume of the 23 different cooperatives, the study revealed a general percentage decline in operating costs relative to sales volume over time.

In order to make the analysis, total sales of all cooperatives in a sample were inflated to 1957–1959 dollar values and the percentage of costs to total sales was determined. A correlation analysis of costs as a percent of sales on sales volume covering the period from 1956 to 1963 was constructed. Operating costs are total costs less cost of goods sold. The correlation analysis revealed that as sales increased the percent of operating costs decreased. In the fruit and vegetable marketing groups, for example, the regression coefficient was negative. The sales volume of the vegetable marketing groups increased during the eight years studied nearly 100 percent, but operating costs increased only 66 percent, showing a declining ratio of operating costs to total sales over time. Similar results were obtained in the other groups of cooperatives studied in Hawaii.

Operating costs of the Hawaii cooperatives studied were stratified into the components of wage and salary costs, administrative costs, cost of maintenance, and costs of miscellaneous items. In all of the cooperatives studied, these categories of cost constituted a relatively consistent portion of the total cost.

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage and salary costs</td>
<td>54%</td>
</tr>
<tr>
<td>Administrative costs—including taxes, advertising, and office operations</td>
<td>25%</td>
</tr>
<tr>
<td>Maintenance and miscellaneous</td>
<td>21%</td>
</tr>
</tbody>
</table>

There were no significant changes in these cost proportions over the eight years studied.

REVOLVING FUND FINANCING—IMPACT ON PLANNING

The revolving fund method of financing has developed extensively as a means of generating funds needed in the organization for maintenance and operation. Erdman and Larsen\(^{22}\) point out that revolving finance plans consist essentially of two parts.

1. Some method of obtaining a flow of capital funds from patrons in proportion to patronage.
2. Some method of returning the flow of capital fund contributions in an orderly fashion to those who contributed them.

\(^{22}\) Erdman and Larsen, *op. cit.*, p. 3.
Erdman and Larsen enumerate four important contributing features in the revolving finance system:

1. It raises from members funds proportionately related to patronage.
2. It continues the investment burden (equity) roughly in relation to patronage.
3. It serves to rotate patron investors as membership changes.
4. It makes possible the maintenance of membership control where substantial amounts of external (borrowed) capital funds are introduced.

In the study by Korzan and Grey\footnote{Korzan and Grey, \textit{op. cit.}, pp. 29-30.} it is reported that while Oregon cooperatives employed a variety of fund sources, most relied rather heavily on revolving funds. In the Hawaii study\footnote{Spielmann and Barmettler, \textit{op. cit.}} it is shown that in the 23 diversified cooperatives studied, revolving funds play a minor role in their composite equity capital holdings.

The revolving approach to fund acquisition and management may involve any number of equity instruments, including common and preferred stock certificates, certificates of equity, and allocated book credits with or without due dates and with or without specified interest payment. The important consideration in this technique of financing is not the type of instrument used but the efficient manner in which funds flow from the owners of invested funds to the cooperative and then back to the owners of the funds. The various kinds of revolving equity funds may be obtained through the sale of stock to members, the various forms of authorization for deductions from sales revenue, and the withholding of portions of refundable retains. A key point in the revolving system is the rotation period. It is in this area that problems of equitability have arisen. The by-laws of the cooperative may or may not prescribe the specific period of revolution.

The New Mexico study\footnote{Burke, Scott, and Hall, \textit{op. cit.}, p. 11.} shows the revolving periods for the 20 cotton gin cooperatives (Table 8). In all 20 of the ginning associations it is the responsibility of the board of directors to set the proportion of the patronage refund to be distributed in cash and in certificates. Four of the 20 ginning associations did not use a specific revolving period. The remaining 16 revolved refundable retains (patronage refund) anywhere from 4 to 23 years; the average revolving period was 9.3 years.

The problem of equitability arises when a member patron, for one reason or another, withdraws from participation. The difficulty is as follows: The book value of the association's asset may differ from the value of outstanding certificates and, therefore, may or may not reflect the true value of the total investment. Consequently, patrons may be prevented from participating in any capital gains that may have accrued to the association. Conversely, however, they do not share in the capital losses accruing to a declining operation.

In the Farmer Cooperative Service study, Griffin\footnote{Griffin, \textit{Financial Structure of Regional Farmer Cooperatives}, p. 13.} reports that approximately half of the total equity capital of 448 regional cooperatives was in the
Table 8. Distribution of net savings of 20 cooperative cotton gins, 1962

<table>
<thead>
<tr>
<th>Gin association</th>
<th>Length of revolving period</th>
<th>Property normally paid in cash</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YEARS</td>
<td>PERCENT</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>60</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>54</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>50</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>50</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>42</td>
</tr>
<tr>
<td>9</td>
<td>6</td>
<td>35</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>11</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>12</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>13</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>16</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>17</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>18</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>19</td>
<td>5</td>
<td>b</td>
</tr>
<tr>
<td>20</td>
<td>5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>35</td>
</tr>
</tbody>
</table>

<sup>a</sup> Length of revolving fund period was predetermined.
<sup>b</sup> Not answered.

form of member allocation certificates and book credits. Of the approximately 50 percent, 13 percent were certificates with maturity dates, 33 percent were without maturity dates, and 68 percent were in the form of allocated book credits. Table 9 identifies the equity instruments held by the 448 regional cooperatives studied.

Although this USDA report does not show the specific amounts of capital held in revolving fund systems, it is reported that 58 percent of a total of 1,498 million dollars was acquired by retaining patronage refunds for payment in cash at some future date. Nine percent of the total equity capital was acquired by a combination of selling securities and retaining patronage refunds. Almost 9 percent was acquired from retains of sales proceeds. Ten percent was acquired by a combination of retains and withheld patronage refunds or patronage savings. Thirteen percent came from the direct sale of stock and certificates of equity to member patrons and occasionally to others. The remaining 1 percent came from a combination of acquisition methods.

From the above it seems evident that except for the amounts of assets secured by the sale of securities and by direct sales of stocks and certificates
of equity—in combination amounting to about 22 percent—all capital can be secured by revolving techniques.

<table>
<thead>
<tr>
<th>Source of Capital</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retention of patronage refund</td>
<td>58%</td>
</tr>
<tr>
<td>Outright sale of securities and retained refunds</td>
<td>9%</td>
</tr>
<tr>
<td>Retained from sale proceeds</td>
<td>9%</td>
</tr>
<tr>
<td>Retain and withheld refunds</td>
<td>10%</td>
</tr>
<tr>
<td>Direct sale of stock and certificate of equity</td>
<td>13%</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 9. Equity capital of 448 regional farmer cooperatives at the close of fiscal year 1962

<table>
<thead>
<tr>
<th>Characteristic equity structure—1962</th>
<th>Classification of association</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cooperatives</td>
<td>Centralized</td>
</tr>
<tr>
<td>No associations</td>
<td>448</td>
</tr>
<tr>
<td>Total equity capital</td>
<td>1,498,146</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Common stock</td>
<td>19.0</td>
</tr>
<tr>
<td>2. Preferred stock</td>
<td>21.9</td>
</tr>
<tr>
<td>3. Membership certificates</td>
<td>0.2</td>
</tr>
<tr>
<td>(nonstock)</td>
<td>0.1</td>
</tr>
<tr>
<td>4. Certificate of equity</td>
<td>8.5</td>
</tr>
<tr>
<td>(with maturity dates)</td>
<td>18.0</td>
</tr>
<tr>
<td>5. Certificate of equity</td>
<td>17.5</td>
</tr>
<tr>
<td>(without maturity dates)</td>
<td>20.2</td>
</tr>
<tr>
<td>6. Allocated capital credits</td>
<td>23.9</td>
</tr>
<tr>
<td>7. Unallocated reserves</td>
<td>8.1</td>
</tr>
<tr>
<td>8. Miscellaneous equity</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Evidently, revolving financing does not operate uniformly for all types of cooperatives nor is its practice equally prevalent in all regions. In the Hawaii example, revolving fund financing is not a very significant activity, while in the New Mexico example it was shown to be important. The USDA study of balance sheet data does not show the character of the revolving system since rotation periods are not indicated. The study does seem to show, however, that significant amounts of capital funds are acquired through this method.

It was pointed out earlier that a critical issue in the revolving finance plan is cycle length. There is probably no set number of years for the length of the cycle nor are there, from a financing point of view, good criteria for setting maturity dates on certificates. Maturity dates serve to assure the certificate holders that they will become creditors of the cooperative after the due date. Thus, certificates may be considered evidence of cooperative debt even though they are held by active participating members. Accountants often consider certificates with due dates as cooperative liability. Noteworthy in the
New Mexico study is that only two of the 20 cooperatives with revolving fund financing set maturity dates or cycle length. In both cooperatives the rotation period was five years.

One of the reasons for not setting due dates on certificates of equity is that the capital requirements of the cooperative may change. Due dates may place rather heavy stress on the financial structure at a time when funds are short, when the cooperative needs to increase its facilities or modernize its operation to meet change. Horizontal integration or vertical coordination with other operations may increase requirements for funds to such an extent that the rotation period must be lengthened. On the other hand, in cooperatives in a declining industry, such as those discussed in the first part of this study, or in cooperatives in which financial reserves are adequate to meet foreseeable adjustment requirements, the rotation period may well be shortened. The real test for an effective revolving fund operation is the ability to attract new investment funds.

Korzan argues:

It is conceded that the revolving fund method of financing is 'equitable' and 'business-like' as a means of raising equity capital. However, its characteristics suggest that its use, as a proportion of total financing should be limited. A balanced and flexible financial structure cannot rely on a fluctuating level of earnings for all of its foundation and growth capital.

The major weakness in a policy of using retained earnings for all permanent facilities and expansion is that the source cannot be controlled to match any long-range plan of expenditure. A period of declining or negative margins is often the time when additional funds for expansion and modernization of facilities are most needed. It is true that after the war during a period of rapid growth in sales and margins many cooperatives used the revolving fund almost exclusively and found that it worked rather well. It supported the objective that producers and members who benefit from a cooperative should provide the bulk of the risk capital required, and the fund was a relatively simple and easy way of generating equity financing. In fact, an important practical feature of the revolving fund method has been the ease, simplicity, and economy of additional capital. The procedure of simple withholding savings or part of net proceeds at the end of the year and advising each member of the amount of money he had invested in the association was easier than actively seeking new and additional funds from the members.  

An alternative suggested in this Oregon study consists of increasing the use of common and/or preferred stock. In some cases increased use of borrowed funds is recommended. To propose that more and more common and preferred stock be sold may be unrealistic, since stock can be sold only in an environment of confidence, an environment which many cooperatives find difficult to establish. However, if members are made aware of the need for invested capital and the benefits which could accrue to them as patrons of a well-financed cooperative, they may be more inclined to support their associations with both investment funds and increased patronage. In this respect member education is a vital part of any cooperative's planning and overall financial program.

CONCLUSIONS

The Need for Funds

Financial requirements in all agriculture are expected to expand materially in future years. Future demand for capital and operational funds is expected to increase as investments must be made to replace obsolete equipment; to purchase new equipment, facilities, and machinery; and to implement new and evolving technology designed to continue present trends in labor substitution and to further improve efficiency.

Agricultural cooperatives are likely to participate in this growing trend of innovation if they wish to remain competitive or if they aspire to be business leaders in the western United States. A necessary prerequisite to participation in the adoption of innovations and in growth will be access to sufficient investment funds and/or credit.

A significant problem facing cooperatives will be that of obtaining adequate amounts of equity funds from member patrons. The member equity base must be sufficient to attract loan funds at some reasonable rate. As prices rise, which they are likely to do in the future, large amounts of funds will be tied up in inventories of supplies and equipment. Some cooperatives will experience additional pressure on their financial capability from extension of credit to patrons and customers.

Cooperative Credit

As the demand for investment and operational funds becomes more intense, cooperatives will probably find it expedient to develop ways of avoiding extension of credit directly to members and/or customers. The extension of credit often imposes stress on organizations already short of funds. This is particularly true of small local cooperatives such as those in Hawaii, New Mexico, and Oregon. For these organizations, and probably for most cooperatives, whatever their size or organizational structure, accounts receivable represent an important restraint upon the fundamental purpose of their organization.

The more realistic approach than to assume credit risk and responsibility would be for these associations to shift their patron or customer credit needs to cooperative associations designed for this purpose. In this way, a full line of services normally required in a modern business activity becomes available to patrons and customers alike without causing unnecessary financial drain on their association. Additional efficiencies are built into this approach because it makes credit services available at cost.
The problem of fund availability to such credit federations has been assisted largely through the activities of the bank for cooperatives, which has access to the national money market.

**Funds for Adjustment**

Expansionary future activity envisioned for cooperatives makes important demands upon their fund resources. Traditionally the main source of such funds was the member patron. This was based on the reasoning that those who benefit from a cooperative association ought to pay their way in proportion to the use made of the services of the cooperative. An interpretation of the several studies included in this report leads to the conclusion that the proportionality principle is by and large adhered to in Western agricultural cooperatives.

However, large outlays of funds in the future require thorough planning. Generally, researchers in the Western region concluded that a real need for improving long-range financial planning exists. For example, none of the 23 cooperatives studied in Hawaii had development plans even for two years, much less plans for developing the financial adequacy or stability of the cooperative. A corollary conclusion might be that some cooperatives, particularly small local associations, still seriously lack the professional and member leadership so essential in successful business competition. Planning, particularly financial planning, seems not to be the forte of the small local cooperative association.

Participation by cooperative associations in some federated credit system would encourage long-range planning, since such organizations as the bank for cooperatives have already demonstrated they are well able to provide financial and long-range planning advice.

Researchers in the Western Region and the U.S. Department of Agriculture conclude that for continued successful operation of a cooperative at least 50 percent of its assets ought to be owned by the patrons, and that this ratio is requisite to attracting loan funds into the cooperative enterprise.

Regardless of the method or combination of methods used in acquiring capital fund, an important concern must be the means for adjusting to changing conditions imposed by competition and new technology. Adjustment means more than growth in size or complexity of operations, even though these may be major techniques for survival. The problem of survival might involve industries in which shifts in demand due to technological and innovational advances cause a gradual diminishing of member benefits. In such a case, long-range financial planning might involve such methods as mergers or outright sale. In any case, financial planning has significant contributions to make in minimizing any disadvantageous impact that might arise. A cooperative organization faced with a future of declining importance has the additional difficulty of attracting investment and/or loan funds.

In the more usual situation, adjustment to change involves acquiring new capital, adopting new methods, and making shifts in operational practices. To accomplish these activities it is generally concluded that cooperatives must
dedicate more resources and energy to planning, not only for the short run but also for the long run. Planning for financial adequacy seemingly is a continual function of the controlling body of the cooperative.

Normally, there are three aspects of financial planning essential to cooperative development. First, there are the capital requirements essential to the establishment of the enterprise. Second, there is the period during which financial planning and funds are dedicated to the growth and development of the cooperative. Third, there is the continuing planning that cuts across both of these periods and is essentially concerned with survival. It is to this last concern to which the preceding comments are primarily directed.

Equity-debt ratios, operational costs, and new capital acquisition are usually financial management areas that the cooperative planner can measure and manage effectively. These are things that the planner does as a matter of course, a part of the day-to-day operations of the association. A more difficult sphere of financial planning has to do with less readily quantifiable aspects, such as member-patron attitudes and understandings, investor confidence, impact of technical change, competition from cooperative and non-cooperative sources, and intra-plant competition for scarce funds, particularly as it relates to choosing between farm and off-farm allocation by member patrons.

Obviously, initial development financing, growth financing, and financial planning for survival are integrally related. That is, development of an overall financial policy involves planning in advance and matching appropriate capital sources to anticipated needs. The combination of sources employed should be a result of a consciously designed capital structure program with balance, flexibility, and maximum simplicity as its objectives.
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