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Remi Adeyemo

G. Wayne Malone

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BY
REMI ADEYEMO, GRADUATE RESEARCH ASSISTANT
G. WAYNE MALONE, ASSOCIATE ECONOMIST

MAFES MISSISSIPPI AGRICULTURAL & FORESTRY EXPERIMENT STATION
R. RODNEY FOIL, DIRECTOR MISSISSIPPI STATE, MS 39762
Mississippi State University
James D. McComas, President Louis N. Wise, Vice President

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Remi Adeyemo
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Department of Agricultural Economics
Mississippi State University
Mississippi Agricultural and Forestry Experiment Station

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Introduction

Cooperatives are very important business organizations in Mississippi's agribusiness complex. Services performed by these organizations include supplying production inputs, financing agribusiness firms and marketing farm products. A survey of cooperative business activity showed that in 1975, there were 138 marketing, supply and service cooperatives operating in Mississippi with a combined membership of 126,030. These cooperatives had a gross sales value of $705 million, including inter-cooperative business [9].

Study Rationale

Cooperatives, like other business organizations, rely on two basic sources of financing, (1) ownership or equity capital and (2) debt capital. An appropriate mix of these capital sources is necessary for successful business operations. The major method of obtaining and maintaining equity capital is the revolving fund whereby a portion of the cooperative's annual net earnings are allocated to the member but retained in the business. This retained equity is to be returned to the member at some future date (revolved out). This capital source is more suited to short-term and intermediate needs whereas debt capital is more useful for long term needs.

The equity retained by the firm may have some negative aspects relative to the individual member. While the member has a responsibility to help finance his cooperative, the member could also use these funds in his farm business. The growing capital needs of members is placing greater pressure on their cooperatives to pay more refunds in cash and retire (revolve) previous member-equity capital from the earlier years [4]. The ability to retire old equities and/or pay higher proportions of refunds in cash requires that the cooperative have sufficient earnings to service this net worth as well as provide a means for growth and the provision of future services.

The primary concern is how the cooperative can continue to provide needed services for members and still upgrade its ability to retire old equities. If old equities are to be revolved (paid out), current earnings must be retained for this purpose. The flow of funds to the member-patron is a function of his current and past business volume with the cooperative, the extent of value added by the cooperative and the capital structure of the cooperative.

Objectives

The primary objective of this study is to document the prevalent types of equity retirement programs and patronage refund practices of farm supply cooperatives in Mississippi and evaluate the financial structure of the firms. This objective is divided into the following parts:

1) To document legal constraints and requirements concerning the types and use of retained equities in Mississippi.
2) To determine the general extent of equity-debt capital mixes for farm supply cooperatives in Mississippi.
3) To determine the more commonly used equity-revolving plans of farm supply cooperatives and the specific procedures for paying out equity due to death or retirement of the members.

4) To determine the average rate of cash patronage refunds received and paid by cooperatives in the state.

5) To describe the financial structure of cooperatives and evaluate possible impacts on firm-member relationships of altering cash refund and equity-handling practices.

Procedure

The determination of legal constraints and requirements for handling retained equities in Mississippi was accomplished by documenting the relevant points from the statutes relative to cooperatives. These statutes were clarified by attorneys practicing in the cooperative area.

The primary data used for this study was obtained from a sample of local farm supply cooperatives in the state which are members of MFC Services. The questionnaire was mailed to 25 percent of those cooperatives having over one million dollars of annual sales. The survey results provided information as follows: The equity-debt capital mixtures for farm supply cooperatives in Mississippi; the more commonly used equity revolving plans of farm supply cooperatives; whether there was any specific procedures for paying out equity due to death or retirement of the members; and the average rate of cash patronage refunds received and paid by the cooperatives.

Three representative firms in the sample were asked to supply their annual financial statements for the previous five years. Information from the financial statements was used to evaluate the financial conditions of the cooperatives.

Legal Framework and Requirements for Cooperatives

The purposes of the legal framework are to promote the general welfare of agriculture; to enable producers of agricultural products to cooperate in the production, processing, packing, distribution, financing and marketing of agricultural products and inputs and the elimination of speculation and waste therein; to enable such producers to organize incorporated associations, with or without capital stock, and not to profit but provide service to their members by the organization and operation of such corporations by a simplified and inexpensive method for the promotion and accomplishment of such cooperation and the general welfare of agriculture [8].

Within the present laws, a cooperative may be formed with or without capital stock. Preferred (non-voting) stock may be issued to any party whether or not such party is a producer eligible to own voting stock. However, shares of common stock, or preferred stock enjoying voting rights, shall not be transferable except to producers of agricultural products or organizations to whom they could be issued, and no person shall acquire them by operation of law. If any share holder of common stock or of preferred stock enjoying voting rights shall cease to be eligible to hold such shares, or shall die, or shall be dissolved, if shares be not promptly transferred to some producer or organization eligible to hold the same, the association shall take up such shares at par value or at the option of the association, at appraised value. The value of the share shall be fixed by the board of directors of the association, and the association may pay therefore in cash or by certificate of indebtedness to be thereafter paid from the income of the association [10].

Mississippi Cooperative Practices

The Subchapter T of the Revenue Act of 1962 set up basic requirements for patronage refunds.* At least 20 percent of the refund must be paid in cash and the remainder made in property rights or written notices of allocation. This requirement is also part of the Agriculture Association Law in Mississippi [6].

Basically, there are two types of cooperative organizations according to their income tax status: (1) Tax-exempt cooperative and (2) non-tax-exempt cooperative, often referred to as a Subchapter T organization. Distinctions are based on amounts of business conducted with members and non-members and the procedures for distribution of net income. Only persons engaged in the production of agricultural products are eligible to form tax-exempt cooperatives. Non-tax-exempt organizations may also include regular corporations which choose to operate on a cooperative basis.

In practice, at the end of the year, when net margins have been determined, tax-exempt cooperatives, by board resolution, authorize payments of patronage refunds. Patronage refunds are paid to patrons on the basis of volume of business done with the cooperative during the year. So that the refund might be deductible for purposes of income tax, at least twenty percent of the patronage refund must be paid in cash. The remainder of each patron's patronage refund is carried on the books of the cooperative as an equity credit and is capital surplus because that portion of the patronage refund which is not paid in cash

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*Refunds refer to share of excess (net margins) based on volume of business. Dividends refer to money paid on shares of stock.

to the patron is identified with the same patron on the books. That portion of the patronage refund carried as equity credit is used by the cooperative until such time as the board determines that it may be redeemed without causing financial hardship to the cooperative. Equity credits remain the property of the cooperative until redeemed.

Non-tax-exempt cooperatives do business with member patrons on a cost basis and can deduct all patronage refunds paid to member patrons on the basis of patronage, provided the twenty percent cash patronage requirements are met. However, net margins produced by non-member business is taxable to the cooperative at the regular corporate rate. The after tax non-member margins are earned surplus and may be used as devised by the cooperative. Earned surplus is not carried on the books in the names of member-patrons as are equity credits and is not therefore, capital surplus. Some authorities believe that if earned surplus is later distributed because of dissolution of the cooperative or liquidation of assets, it must be distributed to all member patrons, past and present, on the basis of actual patronage [6].

The patron pays income tax on the entire patronage refund received and allocated and not just on the cash patronage portion. The patron usually consents to pay income taxes either by provision in the by-laws of the cooperative or by endorsing a qualified check which represents the cash portion. A qualified check simply notes that the patron agrees to pay income tax on the total patronage refund.

Occasions arise in which the cooperative pays the income tax on patronage dividends such as: when it is the policy of the cooperative to do so; or when a patron's consent is to be received by endorsement of a qualified check and the patron refuses to accept the check. However, where the cooperative pays the income tax, it pays it at the usual corporate income tax rate [11].

Basically, no requirements exist concerning the use and return of equity capital retained by the cooperative. Pay out of the retained equities is a decision for the board of directors. Even so, it's decisions must represent "equal treatment" which means that equity should be revolved out in a calendar sequence, so that the oldest equities are retired first.

Survey Results of Equity Capital and Refund Practices

Those cooperatives completing the questionnaire represented about 75 percent of the sample. Most of the cooperatives responding had an annual sales volume ranging from $1 million to $2 million. Most of the cooperatives surveyed were non-stock. The few stock cooperatives reported paying a seven percent dividend on their stock in most years.

There was an increase in patron equity from 1976 to 1978. The amount of equity capital during that three year period was greater than debt capital. The average interest rate paid on the debt capital held by members was seven percent, whereas non-member debt was paid seven to eight percent.

Part of the reported income of the local farm supply cooperative is patronage refunds received from other cooperatives with which business is transacted. The total amount received and the amount received in cash varied greatly. The cash portion received varied from 38 percent to 52 percent among those cooperatives responding. The percentage of cash patronage refunds paid to local members ranged from 20 percent to 25 percent of the total patronage refund paid and allocated by the cooperatives responding.

An important indication from the survey was that the majority of the cooperatives reported that they do not have a stated policy concerning revolving equity capital and that there is no provision for retiring equities should the member die or retire. The policy and payout determination is left to the board of directors.

The year of the oldest equity capital reported by the cooperative ranged from 1945 to 1965. Twenty-five percent responded that the major equity problem is they lack the necessary funds. Other responses indicated a position in favor of making distribution of available funds to patrons rather than using them to retire old equity.

The two most commonly expressed equity concerns of member-patrons were (1) most members do not understand why money has to be retained and (2) doubt about whether equity would ever by retired or revolved back to them.

Financial Structure of Cooperatives

Members of a cooperative have a larger responsibility than that of merely purchasing supplies or marketing through their association - namely, the general supervision of the organization. It is the members who must make certain that the association is operating efficiently, so that they, as patrons, may realize maximum savings on their patronage. To be able to exercise their guidance, the members must be familiar with the financial management problems of their association. To present additional financial information, annual financial statements for the most recent five years were collected from three of the cooperatives in the survey.

Balance Sheet Analysis

A balance sheet is a statement of the assets and liabilities of a business. Balance sheets provide information on the status of assets, liabilities and equity which indicates the financial standing of the business at a given time.

Assets

Average current assets of the three cooperatives increased 10 percent during the 1975-78 period. Major changes in average current assets during the period consisted of increases in inventory of 15 percent, miscellaneous receivables of five percent and accounts and notes receivable of eight percent. Although the average amount of cash remained fairly stable, cash as a percent of average current assets declined sharply. Thus the ability of cooperatives to meet current liabilities became more dependent on the liquidity of other components of current assets such as accounts receivable and inventory.

Average investments of the cooperatives in the study increased 62 percent during the 1975-78 period. These investments consisted almost entirely of stock in manufacturing and supply cooperatives located in Mississippi.

Average fixed assests, at book value, of the cooperatives remained fairly stable over the period. Average total assets were $1,115,145 in 1975-76 and $1,381,845 in 1978. This was a 30 percent increase during that period.

Liabilities

Average current liabilities of the cooperatives increased 35 percent from 1975 to 1978. Accounts payable and notes payable accounted for the major portion of the increase in current liabilities. The average long-term liabilities of the cooperatives declined 23 percent. The increase in average total liabilities for the cooperatives was 13 percent. It increased from $507,053 in 1975-76 to $572,992 in 1978.

The increase in accounts payable and notes payable relative to the smaller increase in total liabilities indicates that, on the average, the cooperatives studied were borrowing increasing amounts of capital during the 1975-78 period. Even though average liabilities increased, average net worth of the cooperatives has been fairly stable for the past five years.

Equity Position

Member equity, the third category, consisted of invested and contributed capital, earned capital, retained patronage refunds and patronage dividends. All three cooperatives averaged pay-outs of slightly more than the required 20 percent cash refund. Earned equity has grown steadily. It increased by $394,167 from 1976 to 1978, closing 1978 at $765,389.

Operating Statement Analysis

In addition to their balance sheets, operating statements were obtained from the three cooperatives. Average volume of sales of the three cooperatives increased two percent during the five-year period. Trucking operations increased 67 percent. These two things together indicate a growth in service but a decline in sales net of inflation.

The average operating expenses of the cooperatives increased from $196,003 in 1975-76 to $239,753 in 1978, or 22 percent. Average dividends and refunds increased to about $150,000 in 1976, then declined in 1977 and reached a low of $70,000 in 1978. Dividends and refunds from other cooperatives was a major factor toward stabilizing the average total net margins.

Ratio Analysis

Ratio analysis is a standard accounting procedure. If properly used and its limitation understood, the analysis can be a very valuable management tool. An advantage of ratio analysis is that most of the ingredients needed are available from the operating statement and the balance sheet. The ratios can be used to make comparisons with similar firms within the industry and changes through time. However, ratios provide only an indication of impending danger. They do not indicate the cause. Also, one must be careful in using interfirm comparisons because of differences in accounting procedures among firms. Methods of handling depreciation and overhead allocations vary widely. The analyst must be sure the managers salary and other expense items are handled on a comparable basis. Since ratios from the balance sheet are for only one point in time, they may vary widely from one year to another.

Ratios selected were broken down into four categories depending on the characteristics they measure. These are: 1) financial stability, 2) operating efficiency, 3) growth and 4) returns and benefits to members. Some ratios are useful in more than one category. A summary of calculated values for some standard ratios are shown in Table 1.

The standards for the financial stability and efficiency of co-operatives are documented from Cooper and Smith, [3]. These deal with liquidity, solvency ratios and inventory turnover. The second source of standards is by Mathis and Devino [5]. They present some standards for measuring growth and related financial conditions. Another source documenting standards for a cooperative's returns to members is taken from Roy. [7].

Table 1. Average three-firm ratios for measuring financial stability and proposed standards, 1975-1978 operating years.

Ratio	Year 1975	1976	1977	1978	Standard value
A. Liquidity Ratios					
1. Current	2.09	2.39	1.83	2.02	≥ 2.0
2. Acid-Test	1.31	1.69	1.25	1.25	≥ 1.0
3. Solvency	.36	.30	.28	.18	≤ .50
B. Efficiency Ratios					
1. Inventory Turnover	11.43	14.80	11.09	9.60	≥ 8.0
2. Operating Expense	.11	.11	.11	.13	≤ .17
C. Growth Ratios					
1. Debt to Equity	1.24	.93	.93	.81	≤ .90
2. Member Equity to Total Assets	.39	.48	.59	.61	≥ .55
D. Benefits to Members					
1. Member Equity to Total Assets	.39	.48	.59	.61	≥ .55
2. Return on Owner's Equity	.40	.24	.14	.07	≥ .10
3. Inventory Turnover	11.43	14.80	11.09	9.60	≥ 8.0

The Financial Stability of the Cooperatives

Test for Liquidity. Liquidity refers to the cooperative's ability to meet its current obligations. Liquidity ratios relate current liabilities and current assets.

a) Current ratio = $\frac{\text{Current assets}}{\text{Current liabilities}}$ (Standard is 2.00 or greater)

Current ratio is an indication of short term condition. A cooperative could have a very strong net worth position in relation to total assets and still be so starved for working capital that it is unable to take advantage of quantity discounts, meet emergencies, or even to pay current bills. The current ratio is one of the most commonly used indices of short term financial strength, although it is a rather crude measure. For instance, the margin of safety required between current assets and liabilities implies a possible shrinkage of value in such asset accounts as accounts receivable and inventories. This test involves a liquidation approach rather than evaluation of an on-going concern since it does not explicitly recognize the revolving nature of current assets and liabilities. A general impression regarding this ratio is the higher the better and over 2.00 is a strong position. However, excessive inventories, or idle cash is imprudent, and a 10:1 ratio may not in itself guarantee reserve strength to meet current obligations. To avoid some of these limitations, a modification (the acid test ratio) is frequently used.

b) Acid test ratio = $\frac{\text{Cash + accounts receivable + marketable securities}}{\text{Current liabilities}}$ (Standard is 1.00 or greater)

A ratio below 1.00 can be a warning signal. This acid-test ratio is a measure of the extent to which liquid resources are immediately available to meet current obligations.

c) Solvency ratio = $\frac{\text{Fixed liabilities}}{\text{Owner's equity}}$ (Standard is .50 or less)

This ratio is an indication of long term condition. It guages a cooperative's ability to meet long-term claims by reflecting the portion of the cooperative's capital requirements which is being supplied by the owners. Solvency measures indicate the kind of problems stockholders and creditors might have in recovering their money in the event of failure. On the other hand, the solvency ratio shows the degree of financial leverage and may indicate that the firm should consider increased borrowing if the firm is failing to use its assets to their fullest potential.

Three-Firm Analysis

The current ratio for the cooperatives in this study was above the minimum accepted value during the 1975-78 period except in 1977, when the ratio value fell to 1.83 (Table 1). However, the acid test ratios were acceptable for the entire period.

The solvency ratio was always lower than the suggested minimum value of .50. This indicated financial stability, but it also indicated that a more leveraged position may be assumed by the cooperatives or that interest and availability of funds make investment at this time undesirable.

Based on these three ratios, the financial stability of the three cooperatives was good.

Efficiency of the Cooperatives

(a) Inventory turnover ratio $= \frac{\text{Cost of goods sold}}{\text{Average inventory}}$ (Standard is 8.00 or greater)

Inventory turnover puts focus on how well working capital is being managed. Low turnover ratios suggest that working capital might be used more productively elsewhere in the firm rather than being tied up in merchandise. On the other hand, extremely high ratio values may go hand in hand with items being out of stock, which means a loss of sales. Generally, the higher the turnover the better the use of working capital, so long as out-of-stock problems are not severe.

(b) Operating expense ratio $= \frac{\text{Total operating expense}}{\text{Total net sales}}$ (Standard is .167 or less)

This is a comparative ratio. The values derived depend to a large extent on the type of business operation. Valid comparisons should be made with firms facing similar operating conditions. Operating expense ratio indicate the magnitude of expenses associated with the amount of sales. It can be used to show whether expenses are being kept at a minimum or should be lowered.

Three-Firm Analysis

The average inventory turnover ratios were above the acceptable standard for the period covered. This denotes a good turnover of inventory and a low risk of having unsaleable merchandise. Generally a high turnover of inventory is desirable because the more rapidly the investment in inventory is turned, the smaller the amount of capital required to do a given volume of business. 1976 was a record year with a turnover of 14.80. However, the firms may have experienced some "out-of-stock" problems.

The average operating expense ratio remained well within accepted standards from 1976 to 1978. The cooperatives' ability to keep this value low is an indication of operating efficiency.

These two ratios used indicate that the three cooperatives were fairly efficient organizations. The inventory turnover and operating expense ratios were good, as judged by the accepted standards.

Growth of the Cooperatives

Two commonly used measures for growth are increase in sales and increase in assets. Growth therefore, may be defined as the percentage increase in total assets. A major factor which determines the growth potential of a cooperative is its financial strength. Growth potential can be viewed in terms of equity capital in relation to debt.

a) Debt to equity ratio $= \frac{\text{Total liabilities}}{\text{Owner's equity}}$ (Standard is .90 or less)

b) Member equity to total asset ratio $\equiv \frac{\text{Total member equity}}{\text{Total asset}}$
(Standard is .55 or greater)

This ratio is a leverage ratio used to describe the capital structure of the cooperative. It measures the amount of asset ownership by members.

Three-Firm Analysis

The ratios used in evaluating growth potential indicated that the debt to equity ratio in 1975, 1976 and 1977 of 1.24, .93, and.93, respectively, was not within acceptable standards. During the period the ratio improved and reached the acceptable level in 1978.

The average member equity to total asset ratio was .39 in 1975 and .48 in 1976. In 1977, increased members saving and a slight increase in assets improved the equity to total assets ratio.

The financial analysis indicates that the organizations under study had the financial ability and facilities to grow in 1977 and 1978. However, they were not in a strong growth position, but some growth potential is indicated.

The Returns and Benefits to Cooperative Members

Since the study stressed member benefits, ratios were used to indicate benefits to cooperative members. Two ratios were selected --the equity to total assets ratio and return on owner's equity.

(a) The equity to total asset ratio = $\frac{\text{Total member equity}}{\text{Total assets}}$ (Standard is .55 or greater)

Owner's equity includes retained savings, net saving and allocated returns. Apportioned equities should increase as member patronage and support of their cooperative increases. In an indirect way, this ratio indicates members support of their cooperatives. With good management and efficient operation a stable or increasing value for the equity to total asset ratio while increasing total assets (growth), means increasing member patronage and support.

(b) The return on owners' equity ratio = $\frac{\text{Net margin (after taxes)}}{\text{Owners' equity}}$
(Standard is .10 or greater)

The return on owner's equity ratio measures the returns members receive from the capital they have invested in the organization. This is not a direct cash return to members but a test of the cooperatives' net earnings relative to equity and relative to other cooperatives.

Three-Firm Analysis

The cooperatives' equity to total asset average ratio was not within the acceptable standard until 1977. In 1975 and 1976 the ratios were .39 and .48, respectively. During those years, net margins were very low. Since 1976, higher net margins raised the ratio to .59 in 1977 and .61 in 1978, slightly above the acceptable ratio value of .55.

Return on owner's equity was acceptable for all years except 1978, when the cooperative's net savings did not change. Since 1975, the ratio has decreased from .40 to .07 in 1978. The organizations had low margins that consequently lowered the return on owners' equity.

The inventory turnover ratio is presented again in this section. Its purpose here is not to document efficiency, but to document convenience. Too high a value for the ratio may indicate low inventories and farmer inconvenience since products may be out of stock when the farmer needs them. The average inventory turnover ratio was within standards in all the years covered. The ratio were not excessive, indicating adequate inventories and reasonable supply levels to meet farmer's needs.

The three ratios in this section indicate that net returns were decreasing relative to equity. However, equity relative to assets improved, indicating a possibility for future improvements. Also, the ratios denote good cooperative service and members support of their organization.

Results of Simulation Model

Based on the information from the survey and from the three financial statements a cash flow simulation model was developed and used to evaluate alternative refund policies.* The major simulated test was an increase in the cash portion of refunds paid each year.

Simulation results shows that an inverse relationship exists between the required level of cash refund and the percentage growth rate. As the level of cash refund increases, the capital employed by the firm decreases.

The results also indicate that as larger percentages of cash are returned to members, less money is available for investment. Raising the level of cash refunds limits the growth potential of the cooperatives as less internal funds are available. Hence, the introduction of higher required cash payments reduced the value of total patron benefits and forced the cooperative toward slower growth and greater reliance on non-member capital. Higher cash payments substantially increased the debt position of the cooperatives. As proportions of cash payments were increased, allocated savings that could be accumulated by the cooperative as a source of capital were correspondly reduced. Debt capital was then substituted for this relatively inexpensive equity source, causing an increase in the debt/equity ratio. This development could impair the ability of the cooperative to meet long-run liability claims. Furthermore, the cooperative's ability to obtain additional borrowed capital might be hampered as a consequence of the higher debt position.

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*Details of the model adapted from Beierlein and Schrader [2] are in Remi Adeyemo, Evaluation of Methods of Handling Equity Capital and Patronage Refunds by Cooperatives. Unpublished Ph.D. Dissertation. Dept. of Agricultural Economics, Mississippi State Univ., Dec. 1979.

Summary and Conclusions

The purpose of this study was to document the prevailing types of equity programs and patronage refund practices of local farm supply cooperatives and evaluate the financial structure of the firm in relation to member's needs. Sample data as follows were obtained from a mail survey of farm supply cooperatives in Mississippi: (1) The equity-debt capital mixes, (2) the more commonly used equity revolving plans and specific procedures for paying out equity due to death or retirement of the members, (3) and the average rate of cash patronage refunds received and paid by the cooperatives.

The legal framework concerning the types and use of retained equities by cooperatives in Mississippi was also examined. The revolving method of equity payback is the commonly used system. However, the law specifies that decision making power is vested in the board of directors.

In practice, a majority of the cooperatives do not have a written policy concerning revolving equity capital and there is no written provision for retiring equities should the member die or retire.

Cooperatives are required to pay at least 20 percent of their patronage refunds in cash. Results from the survey indicated that cooperatives have been paying 20 to 25 percent in cash to members. Most of the cooperatives were non-stock. The few stock cooperatives in the sample reported paying dividends of about seven percent. The law, however, requires that dividends on stock not exceed eight percent.

The responding cooperatives reported that most members do not fully understand why earnings are retained. Cooperatives also report that many members are concerned about equity redemption.

Financial aspects of three cooperatives, namely assets, liabilities, operating statements and equity positions were examined. Reports indicated an increase in assets, much of which consisted of investments in other cooperatives. Average total liabilities of the cooperatives increased by 13 percent. The major part of the increase came from accounts payable. The average operating expenses of the cooperative increased by 22 percent.

A financial evaluation was based on four groups of accepted financial ratio standards. The four categories were (1) financial stability, (2) efficiency, (3) growth and (4) returns and benefits to members. This last category measures the benefits members receive from their cooperatives.

The tests for liquidity, namely current ratio, acid test and solvency ratios indicated good financial stability. The three firm average acid test ratio was above the standard. The solvency ratio was lower than the standard of .50.

Efficiency of the cooperatives was examined by using the inventory turnover ratio and the operating expense ratio. The results showed a good turnover of inventory and a relatively low risk of having unsaleable merchandise. However, some "out-of-stock" problems may have been encountered since the turnover generally ranged from 10 to 14 compared to a standard turnover of eight. The operating expense ratio remained well within accepted standards for the period covered. Therefore, the inventory turnover and operating expense ratios indicated efficient operations.

In order to evaluate growth, debt to equity and member equity to total asset ratios were examined. Both ratios indicated little potential for growth from 1975 to 1978. However, these ratios improved during the period and had reached the acceptable standard range values in 1978.

The average inventory turnover, the equity to total assets ratio and return on owners' equity ratios were used to evaluate the returns and benefits to cooperative members. Also, average inventory turnover ratio was used to document convenience. It indicated that supplies were generally available to meet farmers needs with possibility of some out-of-stock situations. The equity to total assets ratio increased to .61 in 1978, just slightly above the accepted ratio value of .55. Returns on owners' equity were acceptable for all years except 1978--when net savings did not change.

In conclusion, most of the financial ratios were favorable. As expected, there were years which were unfavorable, especially for growth. Average business volume and net worth did not show substantial growth. Even though liabilities, excluding net worth, increased more rapidly than assets, the cooperatives remained solvent.

Concerns about eventual distribution of equity capital remain. The study points up the necessity for a good financial position with adequate earnings in order to implement a schedule of equity retirement. While the analysis indicates that the cooperatives in the study were solvent and reasonably efficient, there was no evidence that the firms are in a position to retire equity on a regular basis.

Above all, it was shown that increasing the cash patronage refund resulted in lower patron benefits, under the condition analyzed in the simulation. It also had an adverse effect on the financial structure of the cooperative. It can be concluded, therefore, that increasing the percentage of cash refunds to members would weaken the cooperative's ability to serve its members future needs.

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