

# The Farmer's Cooperative Yardstick: Financial Ratios Useful to Agricultural Cooperatives

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By:

**Lionel Williamson**

University of Kentucky  
Department of Agricultural Economics  
400 Charles E. Barnhart Bldg.  
Lexington, KY 40546-0276

Phone: 859-257-5762

Fax: 859-323-1913

<http://www.uky.edu/Ag/AgEcon/>

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# The Farmer's Cooperative Yardstick:

## Financial Ratios Useful to Agricultural Cooperatives

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Cooperatives are organized to provide economic benefits for their members. Their degree of success is often reflected in each member's increased net profits from the farming operation. However, at the co-op level some services, such as custom fertilizer or feed blending, may not realize much of a net margin. Further, some supplies that farmers need and buy from their co-op may carry low margins but will provide a reasonable return on capital invested in handling them.

Since the co-op emphasizes providing economic benefits for members, co-op management may want to determine where members can save and also may want to project likely trends in such savings. Depending on the co-op's size, this determination focuses on possible savings by departments (profit centers), on potential volume of business, and on other factors that influence these considerations, including

- **Co-op's Volume of Business** -- Influences may include the geographic area served, the share of the market (both by geography and by product) and economic trends influencing agriculture in the area served.
  - **Cost** -- Cost figures should be analyzed from both a long-term and a short-term viewpoint. Would fixed and variable costs change if volume of business changed? Opportunity costs also need analysis. To do so, compare the net margins that may or may not be realized because the co-op does or does not enter a certain line of business.
  - **Product Mix** -- Product mix relates closely to the services available and the resources that the co-op may or may not be able to provide. A complete analysis needs to be made of the impact on:
    - capital requirements of different products,
    - use of personnel,
    - necessary physical facilities required.
  - **Cash Flow** -- Cash flow provides an estimate of the income and expenses for a certain period of time. It helps determine how much capital is needed seasonally. It also identifies the extent to which borrowed capital will be needed to supplement members' equity.
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### The Financial Statement

Co-op members elect a board of directors and make them responsible for sound financial management. In discharging this responsibility management finds the co-op's financial statement (balance sheet and operating statement) very useful. A co-op's financial statement is a snapshot of its financial picture at a given time. It lists assets, liabilities and networth. Information on the financial statement and operating statement helps management analyze how well the co-op is performing; past performance; its ability to meet its current obligations; member equity vs. borrowed capital; management effectiveness, and how well the co-op uses current resources. A series of financial statements (for comparable dates over a period of years) can give management the basis for an opinion about the co-op's changing financial structure and financial strength .

The financial statement should be made on the same day of each year to be most meaningful. Components of financial statements are

- **Assets** -- Assets have a marketable value. They are broken into categories: current assets, intermediate assets and fixed assets.
  - Current Assets* -- Cash or other assets which can be converted to cash through the co-op's normal operations during the year. This includes receivables (what other persons or businesses owe the co-op), inventory held for sale, and other cash items such as marketable securities and stocks and bonds.
  - Intermediate Assets* -- Resources or production items whose useful life is between one and 10 years. Examples are equipment, machinery and some buildings.
  - Fixed Assets* (also called long-term assets) -- Permanent in nature. They consist primarily of real estate and its improvements.

- **Liabilities** -- Liabilities are all debt obligations, falling into three groupings: current, intermediate and long-term. This division permits a realistic assessment of repayment needs.

*Current Liabilities* – Current liabilities are debts due within the operating year, normally a 12-month period. These include notes and accounts payable, rents, taxes, interest, plus the part of intermediate or long-term debt (principal) due within the next 12 months.

*Intermediate-Term Liabilities* --

Intermediate-term liabilities include non-real estate debt and contracts written with the purpose of meeting other seasonal needs. Terms of loans are normally for longer than 12 months but less than 8 to 10 years.

Examples include notes for improvement to

real estate and equipment purchases.

*Long-Term Liabilities* -- Long-term liabilities include mortgages and land contracts on real estate, less the principal balance due within 12 months.

- **Net Worth**--Net Worth is found by subtracting total liabilities from total assets. This number reflects members' equity in the co-op. If the co-op is sold or liquidated, net worth indicates the amount of money available for distribution to members. The method of distribution depends on whether the co-op is organized with or without capital stock. Such distributions are usually addressed in the co-op's bylaws.

## The XYZ Co-op Example

Co-op management may find a number of ratios useful in following the financial trend of their co-op through the years and in comparing their co-op's operations with similar co-ops. The rest of this publication describes three broad categories of financial ratios. As each ratio is defined and explained a fictitious co-op, the XYZ Co-op, will illustrate its use. All examples use a balance sheet and operating statement for the XYZ Cooperative, covering the calendar year January 1, 1986 to December 31, 1986.

### Operating Statement, December 31, 1986

Net Purchases by Patrons	\$960,700	<b>Other Income and Expenses</b>	
Cost of Patrons' Purchases	749,100	Patronage Refunds Received	\$23,688
<b>Gross Margins</b>	<b>\$211,600</b>	Other Revenue Received	4,831
<b>Operating Costs</b>		Other Expenses	12,725
Sales and Wages	\$112,516	<b>Total</b>	<b>\$15,794</b>
Taxes	7,489	<b>Net Margin = Net Operating Margin +</b>	<b>\$48,628</b>
Utilities	4,425	<b>Other Income - Other Expenses =</b>	
Insurances	6,326		
Depreciation	16,084		
Legal and Auditing	7,637		
Miscellaneous	24,289		
<b>Total Operating Costs</b>	<b>\$178,766</b>		
<b>Net Operating Margin = Gross Margins</b>	<b>\$ 32,834</b>		
<b>- Operating Costs =</b>			

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## Balance Sheet, December 31, 1986

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### Assets (what the co-op owns)

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#### Current Assets

Cash	\$ 62,500
Accounts Receivable	105,075
Merchandise Inventory	132,550
Notes Receivable and Prepaid Items	49,500

**Total Current Assets** **\$349,625**

#### Fixed Assets

Land	\$ 63,000
Buildings (after depreciation)	140,219
Equipment (after depreciation)	60,100

**Total Fixed Assets** **\$263,319**

#### Other

Investments in Other Cooperatives	\$ 74,670
Miscellaneous	45,251

**Total Other Assets** **\$119,921**

**Total Assets** **\$732,865**

### Liabilities and Patrons' Equity (what the co-op owes)

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#### Current Liabilities

Accounts and Notes Payable	\$126,508.50
Patrons' Refunds Payable	41,150.00
Accrued Expenses	18,250.00

**Total Current Liabilities** **\$185,908.50**

#### Long-Term Liabilities

Mortgages	\$150,000.00
Certificates of Indebtedness	54,937.50
Total Long-Term Liabilities	\$204,937.50

**Total Liability** **\$390,846.00**

#### Patrons' Equity

Common Stock	\$ 73,610.00
Preferred Stock	118,750.00
Allocated Reserves	95,151.50
Unallocated Reserves	54,507.50

**Total Patrons' Equity** **\$342,019.00**

**Total Liabilities and Net Worth** **\$732,865.00**

## LIQUIDITY RATIOS

### Computation and Interpretation

Liquidity ratios indicate the co-op's ability to meet its current obligations. Two important liquidity ratios are the current ratio and the acid ratio.

#### A. Current ratios

##### Method of Computation:

$$\text{Current Assets} \div \text{Current Debt}$$

**Principle:** The generally accepted ratio is about 2 to 1. The higher the ratio the faster creditors can expect payment. A high ratio can also indicate excess inventory, too much idle cash or a very lenient credit policy. A ratio much below 2 to 1 endangers the co-op's ability to meet current obligations.

**Result:** This ratio is a measure of the co-op's ability to meet its current debt. In our XYZ Co-op the current ratio ( $\$349,625 \div \$185,909 = 1.88$ ) means that the Co-op has \$1.88 current assets for each \$1 of current liabilities. The ratio is 1.88 to 1.

#### B. Acid Test

##### Method of Computation:

$$\text{Current Assets} - \text{Ending Inventory} \div \text{Current Debt}$$

**Principle:** The generally accepted ratio is about 1 to 1. A ratio any lower makes the co-op dependent upon inventory. A ratio much higher could indicate mismanagement in the form of cash or receivables.

**Result:** This ratio indicates the short-term liquidity with which a co-op can meet current debt. In our XYZ Co-op example the acid test ratio is:

$$\$349,625 - (\$132,550 + \$105,075) \div \$185,909 = \$0.60$$

In our example this ratio shows that after these adjustments are made, the XYZ Co-op still has \$0.60 available in current assets to meet each \$1 of current liability obligations. The ratio is 0.60 to 1.

## EFFICIENCY RATIOS

### Computation and Interpretation

Efficiency ratios, also called activity ratios, measure how effectively the cooperative is using the resources at its disposal. Efficiency ratios reviewed in this section include: inventory turnover, day's sales in accounts receivable, sales and wages in proportion to patron's purchase, gross margins, and net margins.

#### A. Inventory Turnover

##### Method of Computation:

$$\text{Cost of Goods Sold} \div \text{Ending Inventory} = \\ \$749,100 \div \$132,550 = \$5.65$$

**Principle:** The acceptable ratio is dependent upon the commodity being analyzed. Basically this ratio measures the co-op's merchandising capacity. The higher the ratio the greater this merchandising capacity. A balanced ratio must be achieved. A ratio too low may indicate too much capital is tied up in inventory. A ratio too high may mean that sales are being lost because the co-op is often out of stock.

**Result:** This ratio shows that over the year the co-op has realized \$5.65 in sales for each \$1 of inventory it had at the end of the year. The rate of inventory turnover varies with commodities, seasons and competency of management. The average monthly inventory for the year will give a more accurate turnover rate.

#### B. Days Sales in Accounts Receivable

##### Method of Computation:

$$\text{(Quantity of accounts receivable} \div \text{purchase from} \\ \text{patrons} \times 360) \\ (\$105,075 \div 960,700 \times 360 = 39.4 \text{ days})$$

**Principle:** This ratio means that, on the average, 39.4 days of sales were tied up in accounts receivable. Since many co-ops operate on a 30 day cash basis, this ratio shows that some portion of the association's accounts exceeded this period. The days of credit sales in accounts receivable also should be calculated to determine the length of time that credit or accounts receivable was extended. In the above example, if 50% of sales were on credit, then 78.8 days of credit sales were actually in accounts receivable.

**Results:** The XYZ Co-op has 39.4 days of sales tied up in accounts receivable. People do not always realize how accounts receivable adversely affect the co-op's financial structure. First, they represent money not available for

operations. Second, as accounts receivable become older, the cost of collection and the amounts written off as bad debts become increasingly great.

### C. Salaries and Wages in Proportion to Patron's Purchases (Sales)

#### Method of Computation:

$$\begin{aligned} & \text{Yearly expenditures for salaries and wages} \div \\ & \text{purchases by patrons} \times 100 \\ & (\$112,516 \div \$960,700 \times 100 = 11.7\%) \end{aligned}$$

**Principle:** This ratio indicates the proportion of patrons' expenditures that pays salaries and wages. In our example, their expenditures account for 11.7% of their total purchases. Similar ratios can be developed to show the relative importance of costs of various items that go to make up administration, distribution and general overhead expenditures.

### D. Gross Margin

#### Methods of Computation:

$$\begin{aligned} & \text{Net purchases or sales for patrons} - \text{cost} \\ & \text{of patron's purchases} \end{aligned}$$

**Principle:** This ratio indicates the co-op's ability to meet operating costs and to realize savings for members. Therefore, it measures how effectively management can adjust operations to annual changes.

**Result:**  $(\$960,700 - \$749,100 = \$211,600 \div \$960,700 \times 100 = 22\%)$ . This ratio shows that the XYZ Co-op had \$211,600 left after paying the cost of purchases (cost of sales). This figure equals 22% of net purchases to patrons.

### E. Net Margins

#### Method of Computation:

$$\begin{aligned} & \text{Net margins} \times 100 \div \text{purchases for patrons} \\ & (\$48,628 \div \$960,700 \times 100 = 5.1\%) \end{aligned}$$

**Principle:** Net margins (savings) is what remains after all operating costs are paid and other income and expenses are taken into account. This ratio shows that the XYZ Co-op realized a net margin of 5.1% of net purchases or sales by patrons. It reveals the co-op's ability to realize savings on its operations for patrons.

## SOLVENCY RATIOS Computation and Interpretation

Solvency ratios relate to the co-op's ability to meet long-term obligations. This section reviews 5 solvency ratios.

### A. Total Liabilities to Patron's Equity (Net Worth)

#### Method of Computation:

$$\begin{aligned} & \text{Total Liability} \div \text{Patron's Equity} \\ & (\$390,846 \div \$342,019 = \$1.14) \end{aligned}$$

**Principle:** This ratio shows that for \$1 of patron's equity, the association has liabilities of \$1.14, a ratio of over 1.1 to 1 and just over the ratio of 1 to 1 generally accepted as a desirable objective. This ratio indicates the relative proportion of capital provided by members and by creditors. Often, patron's equity as a percentage of total assets is used to measure member ownership.

**Result:** This ratio measures the amount of financing supplied by creditors versus the amount provided by member patrons. In our example, member patrons of XYZ Co-op have \$1.14 in liabilities for each \$1 of member patron's equity in the co-op. Member patron's equity represents less than 50% of total equity in the co-op.

### B. Long-term Liabilities to Patron's Equity

#### Method of Computation:

$$\begin{aligned} & \text{Long-term Liabilities} \div \text{Patron's Equity} \\ & (\$204,937 \div \$342,019 = \$0.52) \end{aligned}$$

**Principle:** This ratio shows that for every \$1 in patron's equity, the association has \$0.59 in fixed assets. This ratio measures the extent to which member capital supports long-term investment.

## C. Fixed Assets to Patron's Equity

### Methods of Computation:

$$\text{Fixed Assets} \div \text{Patron's Equity} \\ (\$263,319 \div \$342,019 = \$0.77)$$

**Principle:** In general, the higher the ratio, the less owner's equity is available for working capital. The lower the ratio, the more liquid the patron's equity and the greater the protection from creditors.

**Result:** This ratio measures the extent to which the member patron's equity in the co-op is tied in non-liquid fixed assets. In our example the ratio shows that for every \$1 in patron's equity, the XYZ Co-op has \$0.77 in fixed assets.

## D. Fixed Assets to Term Debt

### Method of Computation:

$$\text{Net Fixed Assets} \div \text{Term Debt} = \\ \$263,319 \div \$204,937 = \$1.3$$

**Principle:** One generally accepted ratio is about 1.5 to 1. Basically, the ratio is considered to be some measure of the co-op's ability to repay term debt creditors. A ratio much lower would raise serious doubts about the co-ops's eligibility for further term debt financing.

**Result:** This ratio measures the relationship of the fixed assets owned by the co-op to term debt. Patrons in XYZ Co-op have a ratio of 1.3 to 1, raising some question about further term debt financing.

## E. Owners' Equity to Total Assets

### Method of Computation:

$$\text{Owners Equity} \div \text{Total Assets} = \\ \$342,019 \div \$732,865 = \$0.47 \times 100 = 47\%$$

**Principle:** No guideline is available. Generally, the higher the ratio, the better position a co-op is in for getting debt financing. But, a very high ratio could indicate that management is not taking advantage of its debt financing capacity.

**Result:** This ratio measures the extent to which the member patrons own all of their assets. Patrons in XYZ Co-op own 47% of the co-op's total assets.

## Financial Controls

As indicated earlier, financial ratios provide tools that are useful to cooperative's management in controlling their operations. Indeed, it is generally recognized that an effective financial control system provides for:

Identifying control points such as departmental performance, costs, margins and equity and debt relationships.

Setting up acceptable standards of performance.

Taking corrective actions such as developing departmental budgets, and reviews of management and employee performance.

## Summary

Sound financial planning and management are two key elements to the successful operation of cooperatives. Sound financing relates to the need for both equity and borrowed capital for operations and growth. It also involves the analysis of financial data to develop financial controls. Cooperative management should find financial ratios to be an important tool in performing this management function.

See your County Extension Office for the entire series of publications on agricultural cooperatives.

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