

EFFECTIVE ACCOUNTING SYSTEMS
FOR LARGE DAIRY FARMS

by

ROBERT S. SMITH

April 1976

76-17

EFFECTIVE ACCOUNTING SYSTEMS FOR LARGE DAIRY FARMS*

Robert S. Smith
Professor of Farm Finance
Cornell University

A farm manager, like the manager of any other business, must have an effective method of collecting, organizing, and interpreting financial information concerning all important dollar aspects of his business. If he does not have such a financial information system, he cannot effectively perform his functions as a manager, particularly the functions of reporting, control, post-audit, and evaluation.

Farm managers and those of us assisting them with their management problems have generally approached farm accounting or record keeping with the notion that it bears little resemblance to general business accounting. Traditionally, it has been assumed that farmers have less ability and less interest in record keeping than do nonfarm businessmen, and that a farm manager's need for records are so unique that general accounting principles must be discarded when he plans his record keeping needs and systems. This general belief accounts for special tax reporting privileges accorded farmers - chiefly the acceptance of cash basis reporting. In a 1975 speech, the editor of Farm Journal stated that there is little to show for the immense efforts made over a period of many years to improve farm accounting and record keeping. This writer disagrees, and believes that farmers' accounting abilities and interests are not essentially different from those of nonfarm businessmen.

*Prepared for delivery to the Large Dairy Herd Management Symposium, University of Florida, Gainesville, Florida, January 19, 1976.

Although farmers' needs for and uses of financial records may have been unique in the past, they are today similar in many if not most respects to the needs of nonfarmers.

Levels of Sophistication in Farm Accounting

It is easy to find examples of both excellent and appallingly inadequate farm accounts among any group of farms. Even some large farms manage to keep operating indefinitely with the most fragmentary financial records.

Check book records - My many extension agent, agricultural banker, and accounting associates still report numerous instances of farmers who produce the proverbial "shoe box" of receipted bills and notations of income as the sum total of their record system. However, it is difficult to believe that any large dairy farm can be operated financially without using a checking account. A wisely used and well kept check record does provide the rudiments of financial information required, but that's the best that can be said for it.

In-house hand tailored systems - Many farm managers have developed their own systems to meet their needs for financial accounting. Farm cash account books, usually accompanied by an inventory book, are printed and made available by state extension services, farm equipment dealers, agricultural bankers, and many others. These single entry record systems are used by an enormous number of farmers, sometimes in accordance with the instructions, but more often the classifications of expenses and receipts are regrouped to the farmer's taste. Many more farmers simply set up their own cash account records, and less frequently an inventory record.

In all of these simplified record systems, tax reporting requirements greatly influence the classifications and headings used.

Central processing mail in systems - Over the past 20 years, many state extension services have invested heavily in developing computer based mail in

record systems for farmers. Other organizations and businesses dealing with farmers have followed suit. Those of us who have been involved in developing one or more of these systems tend to look at them as the answer to all farm accounting needs. In fact, however, a relatively small percentage of all commercial farms - and an even smaller portion of really large farms, are currently enrolled in such a system. Many farmers who are in a mail in system supplement the records so produced by hiring a tax consultant for tax reporting.

Professionally supervised on-the-farm systems - Larger farms can afford to employ a part or full-time bookkeeper, public accountant, or certified public accountant. A few may be required to do so as a condition for obtaining financing. Where farm accounts are under the supervision of a professional accountant, they adhere to sound accounting principles and practices, are more impressive to a banker or an I.R.S. representative, but are not necessarily any more valuable or usable for the farm manager than are relatively simple systems where the farmer or manager or his wife make all the entries, or where a central processing system is used. Unfortunately, in fact, the reverse is often true.

No one best system for big dairy farms - No where is the rugged individualism for which farmers are renowned more evident than in the accounting methods they elect or fail to elect. Management people will continue to find it impossible to develop any one system which appeals to anything like a majority of farm managers.

One limitation of a centralized computer based system is that it can not allow complete freedom for each farm manager to exercise his personal whims and develop his own ideas about what he conceives his particular accounting needs to be. Another limitation is that much of the actual accounting and analysis process takes place off the farm and tends to take the farm manager further away from the knowledge of and daily use of the records in his business

operation. Of course one tremendous advantage of being a part of a record keeping group is the statistics it provides for comparative analysis.

It seems to the author that the larger a dairy farm becomes, the more unique become its accounting needs and the more necessary it becomes to have a resident accountant or bookkeeper who will tailor the financial records to the needs of the individual business, and have them available at all times for use on the farm.

Elements of a Satisfactory Financial Record System for Large Dairy Farms

There are a number of essential items in any record system the farm operator uses or devises if it is to provide the basic financial needs. Most important on this list are the following:

- An annual inventory of all farm assets and liabilities. This inventory, which also serves as a net worth statement and financial statement, should reflect current market values of assets. It may be taken by the farm manager himself, but for various reasons it may be desirable or advisable to have a disinterested appraisal made periodically.
- An ongoing record of book values of farm assets. The annual tax report provides part but not all of this information. The unrecovered cost of land and other nondepreciable items, including the farm home, are also essential. Book values are principally of use for tax purposes.
- Cash receipts and disbursements records. The cash record should be set up in a manner that will produce a monthly cash flow statement and provide a basis for estimating cost and returns for each major enterprise.
- Payroll and employee data. Reporting requirements relative to employees include social security and income tax, and in many states already do or soon will include workmen's compensation, minimum wage, and unemployment

insurance. Although detailed employee financial records are primarily to meet external requirements they are also necessary for good labor management.

If the system contains these four basic elements, is well organized and is consistent over a period of years, it will provide the capability for internal management analysis, and trend analysis, as well as the information needed for comparison with other dairy farms. It will also provide the necessary data for budgeting for future capital investments or enterprise changes.

The Farm Manager's Uses of Financial Records

Financial records have several important uses, and an information system designed specifically to best meet one use will not be adequate for all others. Thus, in planning for records, each important use must be taken into consideration.

Measuring profitability - Any farm accounting system which fails to produce accurate and understandable measures of profitability is inadequate. Most large dairy farms - even those operating as corporations - use cash basis accounting. As a result, measuring profitability becomes more difficult. Market values of dairy farm assets change continually and often rapidly, and sizeable year to year changes in accounts payable and accounts receivable are also common. Thus, cash operating statements provide a poor measure of profits. Even an accrual accounting system using book values for inventories does not truly reflect returns to ownership, management, and capital.

Farm accounting systems sponsored by state colleges and agricultural firms take changes in inventories into account in calculating profit. Most, however, ignore changes in accounts receivable and accounts payable. The New York Extension sponsored mail in system (CAMIS) produces the following measures of profit:

Net cash operating income - Cash receipts less cash expenses

Labor and management income - Total receipts less total expenses

Total receipts includes cash plus increase in feed and livestock inventories.

Total expenses include all cash, including interest paid plus machinery and building depreciation, charges for unpaid family labor, and for equity capital, and decreases in feed or livestock inventories.

Labor, management, and ownership income - The same calculation as labor and management income, with real estate appreciation and interest on equity capital added.

Return on equity capital - Labor, management, and ownership income less a charge (estimated value) of operator's labor and management.

Return to total capital - Return to equity capital plus interest paid on debt.

Records on 37 New York dairy farms with 150 cows or more in 1974 produced the following measures of profit:

Cash farm receipts	\$254,233
Cash farm expenses	<u>198,767</u>
Cash Operating Income	\$ 55,466
Total farm receipts	\$274,073
Total farm expenses	<u>245,362</u>
Labor & Management Income	\$ 28,711*

*Average number operators per farm 1.46.

Labor and management income	\$28,711
Real estate appreciation	13,886
Interest on equity capital	<u>27,921</u>
Labor, Management, & Ownership Income	\$70,518
Labor, management, & ownership income	\$70,518
Less estimated value of operator's labor & management	<u>21,372*</u>
Return to Equity Capital	\$49,146

$$\frac{\text{Return to equity capital } \$49,146}{\text{Equity capital } \$398,872} = 12.3\% \text{ Return to Equity Capital}$$

Variations in methods of calculating measures of profitability are found from state to state and region to region, but the differences are probably of more concern to farm management specialists than to dairy farmers, who are inclined to focus mainly on cash positions and on trends in net worth, paying too little attention to annual measures of profit and return to capital.

Records for obtaining and using credit - Financial institutions serving the credit needs of large dairy farms are far from uniform in their demands for and use of records and accounts. It must be remembered that a banker's interest in farm accounts is different from that of the farm manager. The lender is primarily interested in the security of his loan, the farm manager is primarily interested in whether it will pay to borrow the money and invest it in his business.

Although good lenders are focusing more and more attention on repayment capacity, they are still greatly concerned with their secured position, and thus are balance sheet oriented.

*5% of cash receipts, plus labor at \$6,000 per operator.

In measuring repayment capacity, a lender looks primarily at cash generated as the basis which can be used for debt service. Again using the 1974 figures from large New York dairy farms, repayment capacity can be measured as follows:

Cash receipts	\$254,233
Cash expenses	<u>198,767</u>
Cash Operating Income	\$ 55,466
Add interest paid	<u>14,368</u>
	\$ 69,834
Less operator's estimated living expense	<u>21,000*</u>
Repayment Capacity (interest & principle)	\$ 48,834

Measuring repayment capacity in this way assumes that depreciation will be offset by increased borrowing or roll over of existing debt. Thus, if a dairyman needed to replace a tractor, he would do so by adding to existing debt.

If the business is incorporated the operator is usually salaried, and thus his family cash demands are insulated from the business cash flow. In few unincorporated businesses is there such insulation, and as a result the operator's cash living needs including income taxes, social security, and personal insurance are a first demand on farm cash income. However, few farm operators keep accurate records of family living expense, and thus in measuring repayment capacity, the estimate of family living expenses is indeed rough.

*Estimated as approximately \$15,000 per operator, 1.4 operators per farm.

The balance sheet is the first record demanded by the lender, and an annual statement taken at approximately the same date each year provides both the borrower and the lender with the basis for trend analysis in net worth, the only way to measure financial progress over time. Most lenders want the farmer's estimates of current market values of assets. Commonly, the lender will adjust the farmer's estimates if he believes they are out of line.

Balance sheet analysis by most agricultural bankers is confined to eyeballing the net worth statement and a calculation of a net worth to asset ratio, usually simply expressed as percent net worth or equity. Other conventional ratios are seldom used. A major reason is that dairy farm assets and liabilities do not divide themselves easily into current, intermediate, and long term classes. The more natural division is simply real estate and nonreal estate assets and debt.

Where a large dairy farm is operating as a corporation, with books of account under the supervision of an accountant using book values on farm assets, the banker should be provided additionally with a statement of current market values, as book values will commonly way understate the true net worth of the business.

Cash basis income tax reporting provides a big incentive for postponing tax by advance purchasing of feed and other dairy farm expense items. When this is the practice, accountants and bankers are rightfully concerned about the accrued income tax liability, and are wont to list it as a liability on the farm balance sheet. A more sensible approach is to list postponed income tax as a contingent liability, and even then, only when it can be clearly identified. In practice, postponed income tax for a dairy farm tends to lose its identity rapidly, and in a growing business will seldom ever have to be paid in full.

Accounts needed to meet income tax responsibilities - Everything that is required for income tax reporting is of some use for management analysis and planning as well, but income tax records alone are far from adequate for the purpose of managing a large dairy farm business.

There is a decided advantage to dairy farmers to report on the cash basis for income tax. To do so, the following information is needed:

- A record of cash receipts and expenses.
- An ongoing record of depreciable assets and depreciation.
- An adequate payroll record.
- A record of the cost or book value of nondepreciable assets.

All cash account systems devised by and for farmers are profoundly influenced by the classification of receipts and expenses found on the federal income tax Schedule 1040F. Although I.R.S. does not require receipts and expenses to be classified in accordance with that form, most farm record systems closely approximate it. And it is necessary to separate those cash income items which receive special tax treatment, as well as those expense items which require capitalization for tax recovery. Such adjustments are not difficult and do not reduce the viability of the system for management purposes.

The income tax depreciation record is of limited value for management purposes. First, because it is a very incomplete record of farm assets, and second because the unrecovered cost of depreciable items is often significantly less than market value. In the case of new dairy farm structures, the unrecovered cost may be significantly more than market value.

Payroll records are essential for tax withholding and reporting on farm laborers. Compulsory withholding for income tax will likely be added to social security tax withholding in the foreseeable future. Workmen's compensation, minimum wage, and unemployment insurance are now or likely will be

reporting requirements in most states. Because labor cost and labor management are important items on large dairy farms, payroll records deserve more study and analysis than they are commonly given by the farm manager.

The important nondepreciable assets on most large dairy farms are raised dairy cattle, land, and the home of the owner. They may also include capital improvements to land such as ponds and diversion terraces or ditches. For the cash basis taxpayer, raised cattle have no book value and thus no tax record needs to be kept. The book value of the land should be determined at acquisition and kept as a permanent record. Improvements made on the land or to the farm home should become part of a permanent record when made. This information becomes essential upon eventual disposition.

There is no doubt that record requirements for income tax reporting have had tremendous influence on the accounting systems used by farmers. Probably most of that influence has been good. Undoubtedly many farmers would have much less financial information available for management purposes if they were not forced to meet tax requirements. On the other hand, too often farm accounts are set up solely to meet tax requirements, and no recognition is made of the inadequacy of tax records for management purposes.

Records needed for other financial planning - In both unincorporated and corporate family owned farm businesses there are particular reasons for maintaining a record system which will clearly show property values and division of ownership between family members at all times.

In a corporate business, the stock book must be kept current and will show the division of shares, but even here, there is often misunderstanding of when shares have been or will be given or sold in family transfers. And there is seldom a method provided for determining the market value of shares on a regular basis and particularly at time of transfer. Without this information, the tax record is inadequate and family misunderstandings are common.

In an unincorporated family dairy farm business, the ownership pattern is often clouded. Individual animals are often owned by the children, but the herd inventory, bank liens, and registration papers commonly do not reflect what the family believes to be the ownership situation. Large dairy farms have usually been put together by combining several parcels of real estate, each represented by a separate deed. Joint title between husband and wife or between other related parties on some or all of the deeds sometimes leads to confusion over ownership. And because dairy farm real estate is often held by several generations of the same family, original cost or book value figures are difficult to reconstruct and bear no relationship to market values.

All of these facts add to the critical need for records which clearly show ownership and both book and market values. Without them farm family estate planning and intergeneration transfers cannot take place on a sound basis.

Summary

The owner and manager of a large dairy farm must have a financial information system which will allow him to perform the important management functions of control, financial analysis, evaluation, and reporting.

There is no one financial accounting system best suited to all large dairy farms. But as a minimum, a satisfactory system must provide an annual inventory of market values of assets and liabilities, an ongoing record of book values, and a cash receipts and disbursements record which is sophisticated enough to produce monthly cash flows and is useable as the foundation for forward planning and enterprise analysis.

The financial information system must be designed in such a way that it can be used to analyze the business and measure profits, be acceptable to the creditors of the business, produce the necessary tax planning and labor

reporting information, and be suitable for the family purposes of sharing ownership, transferring property to the next generation, and estate planning.

Farmers in general are no more nor less sophisticated in keeping and using financial accounts than are nonfarmers. There are some unique aspects of financial accounting for dairy farms, and these particular features should be recognized not only by farmers, but also by management specialists, accountants, and tax consultants who work with them.