Risk and Resilience in Agriculture

Preparing an Income Statement

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The primary objective of most businesses is to make a profit. The farm/ranch business is no exception. Historically, farmers/ranchers have used a variety of techniques to measure business performance. These have included yield per acre, pounds of gain per day, and other observable physical phenomenon. These relationships were historically related to profit particularly during periods of stable input and output prices. However, the relationship was less than perfect and is becoming more imperfect with the volatile price situation and rapidly changing input-output relationships of modern agriculture.

Neither the farmer nor the lender can depend upon physical measures as indicators of net income from the farming operation. The farm, like any other business, must generate net income to continue operation. How well the business performs is reflected in resources used and net income earned on assets. A 150 bushel corn yield or a 30 bushel wheat yield is not necessarily an indicator of profit in the farm business.

The profit summary for the business is called different names such as income statement, profit and loss statement, and operating statement. Regardless of the name, the purpose is to measure the net return of a firm's production over a specific accounting period (most likely a calendar year). Unlike the balance sheet, which considers only a point in time, the income statement is a summary of economic events over a specified time period. While different periods are useful to different types of businesses (monthly, quarterly, or semi-annually), the standard accounting period usually used in agriculture is one year. The one year time frame is more useful in agriculture because it more nearly coincides with the agricultural production cycle.

One of the greatest problems in preparing an income statement is the measurement of income and expenses. The measurement of income is especially complex. For example, net income above production expenses often doesn't allow for tax obligations. Even after deducting taxes from net income, several other items must also be deducted. These include family living expenses, social security taxes, retirement allocations and principal payments on debts. The remainder represents additions to retrained earnings and is available for new investment and firm growth. However, one additional item that must also be considered is depreciation. While depreciation is listed as an expense and subtracted from income, it is retained by the firm for capital replacement and as such is part of the total funds available to the firm.

Cash Basis or Accrual Basis

Another questions that must be addressed is the type of accounting used in preparing the income statement. Cash basis accounting is widely employed in agriculture because the Internal Revenue Service allows farmers to file their income tax returns on a cash basis. Cash basis accounting includes cash expenses and cash revenue plus an allowance for depreciation. It permits considerable flexibility for the firm. Products can be held and sold later to delay cash income, or inputs can be prepaid to add to cash expenses. Cash basis accounting is a useful tax management tool, but is of little use in arriving at an accurate measurement of true net income or business performance. Traditional performance ratios cannot be computed when the cash method of accounting is used to prepare income statements.

Accrual basis accounting is appropriate for an accurate measurement of net farm income, even though it is normally more complicated than cash basis method for income tax purposes. This method of accounting includes those operating transactions that affect owner equity. Net income is the difference between those transactions that decrease equity and those that increase equity. Thus, with the accrual basis, it makes no difference when the actual sale occurs. The value of inventory changes (commodities, livestock or supplies) are included as well as any accrued expenses or receipts even though they have not been paid or received. Capital items (additions or deletions) are depreciated and any net gains or losses in the disposition of such assets are included. Any accrued expense or receipt applicable to the accounting period is included in the accrual basis of accounting even though a cash transaction has not occurred. Thus, this system shows more clearly the effects of the firm's operations on owner equity during the accounting period.

Structure of the Income Statement

Income statements are designed with various levels of complexity. The more complex the business under consideration, the more likely it will be necessary to employ a more complex or detailed income statement. Regardless of the level of complexity, provisions must be made in the statement to account for all expenses and receipts, whether cash or accrued. Thus, specific provisions must be made to handle inventories of commodities, livestock and farm supplies; gains or losses from asset sales; income and social security taxes; family living expenses; and adjustments in accounts on notes receivable.

Analysis of the Income Statement

The income statement is designed to answer the question - How well did this farm perform financially during some past period? The time period usually covered by an income statement is the 12-month period corresponding to the accounting period of the farm. The calendar year is the most common accounting period for farms. Profitability is considered the single best measure of financial performance of the farm. Consequently, an income statement is sometimes called a profit and loss statement. An income statement does not measure performance relative to other objectives such as prestige, growth in acreage, and minimization of risk, or other non-monetary goals of the farm manager.

The income statement measures the flow of all outputs and inputs for the period. Fixed and variable costs, changes in inventories and noncash items are all considered. In the case of any business using the owner's labor and capital, there are important practical complications associated with the measurement of flows of service from owned resources. These flows are measured using the opportunity cost concept.

Net farm income is a measure of the return to the owner's labor, capital and management and unpaid family labor. It is calculated prior to charging for the services of these four items. Therefore, profit, as it is typically used in income statements for large businesses (e.g., a publicly held corporation listed on a stock exchange), is different from net farm income calculated for a sole proprietorship or partnership operating a farm. A large publicly owned corporation subtracts all paid labor as does the farm business. However, the family farm business typically has a large amount of unpaid family labor. The publicly owned corporation also explicitly recognizes dividends or the return to owner's capital. Net farm income recognizes neither family labor nor capital as calculated here:

cash receipts (gross farm income)
- cash expenses
± change in inventory of farm products, farm supplies, market livestock and raised breeding livestock
- depreciation
± gain or loss on disposition of depreciable assets
± change in accounts payable and accounts receivable
= Net Farm Income.

Net farm income measures only farm business related items. Both cash and non-cash items are included. Change in the value of inventory and depreciation are the two most important non-cash items influencing net farm income. Net cash income is equal to cash receipts minus cash expenses. However, this income measure can be a very misleading indicator of financial performance because it excludes production not sold, inputs used but not paid for during the year, and other transactions where cash exchanged hands at a time different from when a sale or purchase was made.

For similar reasons, the farmer's federal income tax return (1040F) is not as good an indication of farm performance as the net farm income calculation. The 1040F Schedule F form does include depreciation, but omits inventory changes if the farmer is using the cash accounting method as practically all farmers do.

The forms at the end of this section provide a systematic procedure for actually calculating net farm income for a given farm. The various revenue and expense categories are specific parts or components of the definition of net farm income given above. In the revenue section, inventory changes are related to each category of receipt. For example, the inventory change (ending inventory minus beginning inventory) in grain and hay is combined with cash sales of grain and hay to get a net grain and hay revenue figure. Other components of the cash receipt category in the net farm income definition can be examined in the revenue section of the income statement.

In the expense part of the income statement, there are two adjustments to the cash operating expenses. The first is adjustment of unused assets, a change in inventory. An example is fertilizer purchased but not used. The second is adjustment of unpaid items, a change in accounts payable. An example is fertilizer used but not yet paid for. The interest expense is only interest on borrowed capital. Interest on equity capital is not charged here, but is part of the prorating of net farm income.

An income statement may or may not include non-farm income items. If a sole proprietor has non-farm business activities, net farm income will not be a measure of total return to his owned resources. To get such a measure, non-farm items such as off-farm wages, interest and dividends on non-farm investments, gain or loss on sale of non-farm assets, and net return from self employment activities off the farm must be included. If the income statement is to cover both husband and wife, spouse's non-farm income also needs to be included. However, the exclusion of these non-farm items provide a more accurate picture of the farm's performance.

Problems Incurred

There are several problems which can cause difficulty in completing an income statement. Most of these problems stem from inexperience in taking into consideration all revenue and expense items which influence net farm income. On an individual has established procedures for handling these situations, they are unlikely to be more than routine considerations.

1. The first problem is confusion over which cash flows to exclude from the income statement. Common examples are cash received, through loans, principal payments made on loans, cash gifts received, inheritance, and cash purchase of durable assets. None of these items are included in the calculation of net farm income although each may play an important role in decisions of farm manager has made during the year. These are capital transfers rather than income statement items.

2. A second potential problem is including personal items as part of the net farm income calculations. Examples of personal items excluded from net farm income are personal income tax, self-employment tax, the personal use of a business automobile or truck, personal expenditures for family members who are also farm employees, and the household part of the telephone, electricity, and other utility bills.

3. A third problem is including the gross revenue from sale of purchased feeder livestock as part of the calculation of gross value of farm production. to the extent that the sale of fattened livestock includes the purchase cost of the feeder livestock and the value of purchased feed, the gross revenue is not value added by the farm and thus is not part of the gross value of farm production.

4. A fourth problem is the double counting of home raised feeds. Feed such as hay and corn raised on the farm and fed to livestock is not an expense item in the income statement. The cash expenses (e.g., seed and fertilizer) of raising this feed are included with other cash operating expenses.

5. A fifth problem is handling breeding livestock. Breeding livestock may be either purchased or home raised. Livestock may appreciate, depreciate or not change in value during the year. There also may be substantial cash outlays for breeding livestock in a single year which are not justifiably charged to a single year. Consequently, the inventory change of breeding livestock is a critical revenue measure on livestock farms. Current market values should be used for valuing both home raised and purchased breeding livestock. For income tax purposes, separate records need to be maintained so that depreciation calculations on purchased breeding livestock can be calculated and reported as part of the farmer's Federal income tax return.

6. A sixth problem is mistakes in inventory calculation. These mistakes may be either in the physical counts of inventory or the appropriateness of per unit values used.

7. A final problem is handling family labor. Family members working on the farm may be either paid or unpaid.

If they are paid, that is, some formal compensation agreement and the family labor is not paid, family labor becomes a part of the package of resources compensated by net farm income.

The construction of an income statement and the resulting income measures should provide useful information for the farm manager. This is most likely to be accomplished if the income statement format and procedures within the income statement are adapted to the particular circumstances of the farm. The income statement may be as narrow as a farm business or as broad as the farm and household. It may be as narrow as part of a sole proprietor's activities or as broad as all members of the household. No single form or format will perfectly fit all circumstances; therefore, flexibility is helpful when constructing and using an income statement. Some flexibility is essential if the income statement is to be a routine part of a farm manager's analysis of his business.

Summary

The income statement shows the profit or net value of a firm's production over a specific accounting period. Two accounting methods were discussed; cash and accrual. Although the cash method is the most popular form of accounting for tax purposes, accrual accounting reflects a more accurate picture of the operation and allows development of financial ratios used to measure performance. Like any other financial management tool, income statements can be used as projections of future operations.