

Understanding Profitability

Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long run. So measuring current and past profitability and projecting future profitability is very important.

Profitability is measured with income and expenses. Income is money generated from the activities of the business. For example, if crops and livestock are produced and sold, income is generated. However, money coming into the business from activities like borrowing money do not create income. This is simply a cash transaction between the business and the lender to generate cash for operating the business or buying assets.

Expenses are the cost of resources used up or consumed by the activities of the business. For example, seed corn is an expense of a farm business because it is used up in the production process. Resources such as a machine whose useful life is more than one year is used up over a period of years. Repayment of a loan is not an expense, it is merely a cash transfer between the business and the lender.

Profitability is measured with an "income statement". This is essentially a listing of income and expenses during a period of time (usually a year) for the entire business. **Income Statement** (<http://www.extension.iastate.edu/agdm/wholefarm/xls/c3-24farmincomestatementshortform.xls>), is used to do a simple income statement analysis. An Income Statement is traditionally used to measure profitability of the business for the past accounting period. However, a "pro forma income statement" measures projected profitability of the business for the upcoming accounting period. A budget may be used when you want to project profitability for a particular project or a portion of a business.

Sample 1. Income statement.

Income	
Sale of Crop Products	\$50,000
Sale of Livestock Products	\$25,000
Government Payments	\$10,000
Total Income	\$85,000
Expenses	
Seed	\$10,000
Fertilizer	\$20,000
Feed	\$10,000
Processing	\$10,000
Marketing	\$5,000
Interest	\$5,000
Depreciation	\$10,000
Total Expenses	\$65,000
Net Income	\$20,000

Reasons for computing profitability

Whether you are recording profitability for the past period or projecting profitability for the coming period, measuring profitability is the most important measure of the success of the business. A business that is not profitable cannot survive. Conversely, a business that is highly profitable has the ability to reward its owners with a large return on their investment.

Increasing profitability is one of the most important tasks of the business managers. Managers constantly look for ways to change the business to improve profitability. These potential changes can be analyzed with a pro forma income statement or a **Partial Budget** (<http://www.extension.iastate.edu/agdm/wholefarm/html/c1-50.html>). Partial budgeting allows you to assess the impact on profitability of a small or incremental change in the business before it is implemented.

A variety of **Profitability Ratios** (<http://www.extension.iastate.edu/agdm/wholefarm/xls/c3-55finperformancemeasures.xls>) can be used to assess the financial health of a business. These ratios, created from the income statement, can be compared with industry benchmarks. Also, **Income Statement Trends** (<http://www.extension.iastate.edu/agdm/wholefarm/xls/c3-56interprfintrendsheets.xls>) can be tracked over a period of years to identify emerging problems.

Accounting methods

Cash method of accounting

Traditionally farmers have used the “cash method” of accounting where income and expenses are reported on the income statement when products are sold or inputs are paid for. The cash method of accounting, used by most farmers, counts an item as an expense when it is purchased, not when it is used in the business. This has been used as a method of managing tax liability from year to year. However, many non-farm business accounting systems count an item as an expense only when it is actually used in the business activities.

Cash accounting formula

+ Income (when farm products are sold)
 - Expenses (when production inputs are purchased)
 = Net Income (difference between sales of products and purchases of inputs)

However, net income can be distorted with the cash method of accounting by selling more than two years crops in one year, selling feeder livestock purchased in a previous year, and purchasing production inputs in the year before they are needed.

Accrual method of accounting

To provide a more accurate picture of profitability, the accrual method of accounting can be used. With this method, income is reported when products are produced (not when they are sold) and expenses are reported when inputs are used (not when they are purchased). Accrual accounting uses the traditional cash method of accounting during the year but adds or subtracts inventories of farm products and production inputs on hand at the beginning and ending of the year.

Accrual accounting formula

+ Cash Income (when farm products are sold)
 - Beginning value of inventory of farm products (farm products sold this year but produced last year – products not produced in the current year).
 + Ending inventory (farm products produced this year but sold next year)
 = **Accrual Income** (when farm products are produced)

+ Cash Expenses (when production inputs are purchased)
 + Beginning inventory (production inputs used this year but purchased last year)
 - Ending inventory (production inputs purchased this year but used next year)
 + Ending accounts payable (production inputs used this year but paid for next year).
 - Beginning accounts payable (production inputs paid for this year but used last year).
 = **Accrual Expenses** (when production inputs are used).

= **Accrual Net Income** (difference between the value of products produced (accrual income) and cost of input used (accrual expenses))

A worksheet for computing **Net Farm Income Statement** (<http://www.extension.iastate.edu/agdm/wholefarm/xls/c3-25accrualnfi.xls>) with accrual accounting is available that contains schedules for including beginning and ending inventories. Information on creating and using a **Net Farm Income Statement** (<http://www.extension.iastate.edu/agdm/wholefarm/html/c3-25.html>) is also available.

Although seldom used in farming, double entry accounting will provide results similar to accrual accounting. Double entry accounting also updates the net worth statement every time an income or expense occurs.

Defining profitability

Profitability can be defined as either accounting profits or economic profits.

Accounting profits (net income)

Traditionally, farm profits have been computed by using “accounting profits”. To understand accounting profits, think of your income tax return. Your Schedule F provides a listing of your taxable income and deductible expenses. These are the same items used in calculating accounting profits. However, your tax statement may not give you an accurate picture of profitability due to IRS rapid depreciation and other factors. To compute an accurate picture of profitability you may want to use a more accurate measure of depreciation.

Accounting profits provide you with an intermediate view of the viability of your business. Although one year of losses may not permanently harm your business, consecutive years of losses (or net income insufficient to cover living expenditures) may jeopardize the viability of your business.

Economic profits

In addition to deducting business expenses, opportunity costs are also deducted when computing “economic profits”. Opportunity costs relate to your money (net worth), your labor and your management ability. If you were not farming, you would have your money invested elsewhere and be employed in a different career. Opportunity cost is the investment returns given up by not having your money invested elsewhere and wages given up by not working elsewhere. These are deducted, along with ordinary business expenses, in calculating economic profit.

Economic profits provide you with a long-term perspective of your business. If you can consistently generate a higher level of personal income by using your money and labor elsewhere, you may want to examine whether you want to continue farming.

Profitability is not cash flow

People often mistakenly believe that a profitable business will not encounter cash flow problems. Although closely related, profitability and cash flow are different. An income statement lists in-

come and expenses while the cash flow statement lists cash inflows and cash outflows. An income statement shows profitability while a cash flow statement shows *liquidity*.

Many income items are also cash inflows. The sale of crops and livestock are usually both income and cash inflows. The timing is also usually the same (cash method of accounting) as long as a check is received and deposited in your account at the time of the sale. Many expense items are also cash outflow items. The purchase of livestock feed is both an expense and a cash outflow item. The timing is also the same (cash method of accounting) if a check is written at the time of purchase.

However, there are many cash items that are not income and expense items, and vice versa. For example, the purchase of a tractor is a cash outflow if you pay cash at the time of purchase as shown in the example in Table 1. If money is borrowed for the purchase using a term loan, the down payment is a cash outflow at the time of purchase and the annual principal and interest payments are cash outflows each year as shown in Table 2.

The tractor is a capital asset and has a life of more than one year. It is included as an expense item in an income statement by the amount it declines in value due to wear and obsolescence. This is called “depreciation”. The depreciation expense is listed every year. In the tables below a \$70,000 tractor is depreciated over seven years at the rate of \$10,000 per year.

Depreciation calculated for income tax purposes can be used. However, to accurately calculate net income, a more realistic depreciation amount should be used to approximate the actual decline in the value of the machine during the year.

In Table 2, where the purchase is financed, the amount of interest paid on the loan is included as an expense, along with depreciation, because interest is the cost of borrowing money. However, the principal payments are not an expense but merely a cash transfer between you and your lender.

Table 1. Tractor purchase - no borrowing.

Purchase of a \$70,000 tractor, no money borrowed, depreciated over seven years.

	<u>Cash Outflow</u>	<u>Expense</u>
Current Period	\$70,000	
Year 1		\$10,000
Year 2		10,000
Year 3		10,000
Year 4		10,000
Year 5		10,000
Year 6		10,000
Year 7		10,000
Total	\$70,000	\$70,000

Table 2. Tractor purchase - borrowing.

Purchase of a \$70,000 tractor, \$45,000 down payment, \$25,000 paid over five year, seven percent interest, depreciated over seven years.

	<u>Cash Outflow</u>	<u>Expense</u>
Current Period	\$45,000	\$0
Year 1	\$5,000 principal \$1,750 interest	\$10,000 depreciation \$1,750 interest
Year 2	\$5,000 principal \$1,400 interest	\$10,000 depreciation \$1,400 interest
Year 3	\$5,000 principal \$1,050 interest	\$10,000 depreciation \$1,050 interest
Year 4	\$5,000 principal \$700 interest	\$10,000 depreciation \$700 interest
Year 5	\$5,000 principal \$350 interest	\$10,000 depreciation \$350 interest
Year 6	\$0	\$10,000 depreciation
Year 7	\$0	\$10,000 depreciation
Total	\$75,250	\$75,250

Other financial statements

An income statement is only one of several financial statements that can be used to measure the financial strength of a business. Other common statements include the balance sheet or net worth statement and the cash flow statement, although there are several other statements that may be included.

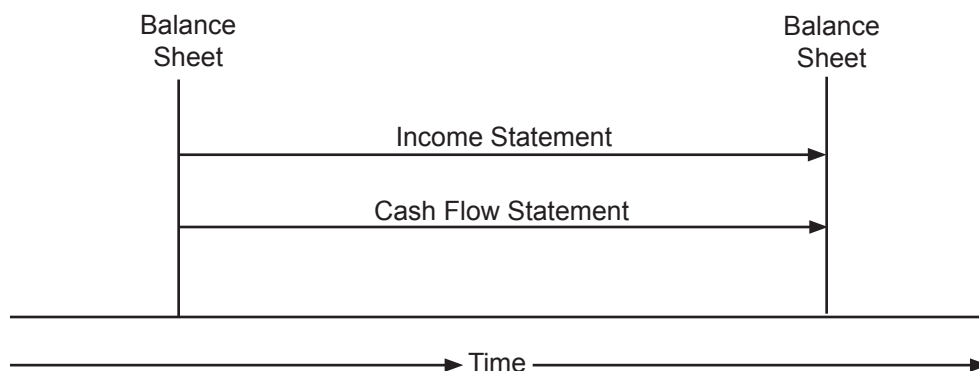
These statements fit together to form a comprehensive financial picture of the business. The balance sheet or **Net Worth Statement** (<http://www.extension.iastate.edu/agdm/wholefarm/html/c3-19.html>) shows the

solvency of the business at a specific point in time, statements are often prepared at the beginning and ending of the accounting period (ie. January 1). The statement records the assets of the business and their value and the liabilities or financial claims against the business (ie. debts). The amount by which assets exceed liabilities is the net worth of the business. The net worth reflects the amount of ownership of the business by the owners.

The **Cash Flow Statement** (<http://www.extension.iastate.edu/agdm/wholefarm/html/c3-14.html>) is a dynamic statement that records the flow of cash into and out of the business during the accounting period. A positive (negative) cash flow will increase (decrease)

the working capital of the business. Working capital is defined as the amount of money used to facilitate business operations. It is calculated as current assets (cash or near cash assets) less current liabilities (liabilities due during the upcoming accounting period).

Figure 1. Integrated financial statements.



A Complete set of **Financial Statements** (<http://www.extension.iastate.edu/agdm/wholefarm/xls/c3-20-25-55comprfinstatements.xls>), including the beginning and ending net worth statements, the income statement, the cash flow statement, the statement of owner equity and the financial performance measures is available to do a comprehensive financial analysis of your business.

To help you assess the financial health of your business, **Financial Performance Measures** (<http://www.extension.iastate.edu/agdm/wholefarm/html/c3-55.html>) allows you to give your business a check-up. **Interpreting Financial Performance Measures** (<http://www.extension.iastate.edu/agdm/wholefarm/html/c3-56.html>) helps you to understand what these performance measures mean for your business.