# Determining Farm Profitability

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As agricultural producers continue to work towards becoming more profitable they will find an increasing need to understand various financial terms and ratios. Having a real understanding of various financial terms and ratios and how they affect the farm business will become increasingly important as agricultural producers compete for not only the physical resources needed for farming but for the best set of financial resources available. A keen sense of how key financial items are measured and why they are so important to the farm business will be essential to producers who intend to remain in farming for years to come. Among the many terms and ratios producers will need to understand is how farm profitability is determined or measured and what it does and does not include in its calculation.

Many producers have a sense of what they believe is included in the farm profit or farm profitability number. In order to compare the profitability of one farm to that of another, it is important that all producers have the same guidelines for determining what is really included in the numerical calculation of farm profitability. Accurate and detailed balance sheets, constructed at the same time each year, are essential for establishing the beginning and ending points in determining farm profitability for any given year.

The first calculation in determining farm profitability is to determine the net cash income figure, the net difference of cash income minus cash expenses. This number is also typically associated with income tax planning. This net difference can be either a positive or negative number. The second item to consider is the gain or loss in the inventory of all current assets, including commodities produced and held for sale or use. If the year-end inventory value of these commodities, grain, feed, and calves for example, is greater than the beginning year value for these commodities, the positive numerical difference is then added to the net cash income figure previously discussed. If this inventory change were negative, the negative value would then be subtracted from the net cash figure.

The third item for consideration is the value of items such as prepaid expenses, accounts receivable, and other income items. Again, the net gain or loss in these figures is added to the net cash income figure. The fourth item is the change in accounts payable and accrued expenses. If the year-end inventory of these expense items is less than the beginning year total, the change is considered positive and is added to the net cash figure. If the change were negative, this value would then be subtracted from the net cash total.

The final calculation involves determining the cost of capital used in the year's production activities and subtracting it from the net cash income figure. For example, ten percent of the invested value of the farm machinery and three to five percent of the invested value of the farm buildings and improvements would be a reasonable capital cost of doing business. Also included in the calculation of capital used is the decrease in the value of the beginning breeding herds. It should be noted that all capital costs are based on invested dollars only and do not reflect any increase or decrease in values due to inflation or deflation. One other capital adjustment that would also be included is the loss in dollars of stock on loan principal amounts repaid to lenders where stock is included in the loan itself.

Farm profitability or net farm income is then the summation of all the items just discussed and listed as shown in table 1. It is important to note what items are not included in the calculation of farm profitability or net farm income.

Two items that are not included in calculating the net farm income figure are principal payments made and family living expenses. These items are provided for from farm profits but are not considered in the calculation of the farm profitability figure. Also left out of the equation and thus not included in the net farm income figure is any non-farm income.

The basic reason that principal payments, family living expenses, and non-farm income are not included in the calculation is that by including these items they could become the determining force behind the ending net farm income profitability number. For example, a high profit farm could appear as a low profit farm if it was charged a generous family living allowance and made large principal payments. Farm profit must be based on the workings of the farm assets and not be misdirected by including other items. Inclusion of these items would be useful in looking at the concept of total cash flow ability.

It is important that farm profitability not be confused with cash flow. A farm can cash flow by selling down its carry-over inventory and yet not be profitable. A farm can be profitable and not cash flow if the principal payments and family living withdrawals exceed the dollars of net farm income available to handle these items in any one year.

Why a common measure of farm profitability? It is only with a common measure of farm profitability or net farm income that one farm can be accurately compared to another in this highly competitive business of agriculture. A common method of calculating farm profitability establishes the guidelines under which we can both compare and analyze the business of farming in today's modern agricultural environment.

The Carrington Area Farm Business Management Program uses the described procedure as part of the FINPACK system of farm business analysis and planning. The FINPACK system was developed at and is made available through the Center for Farm Financial Management, University of Minnesota Extension Service, St. Paul, Minnesota. In North Dakota the FINPACK system is available through the department of agricultural economics at North Dakota State University, Fargo, North Dakota.

Table 1. Calculating Farm Profitability.

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| A. | Cash Income minus cash expenses …… | $ _____ |
| B. | Inventory change in current assets, including grains, deferred cash sales, feed, and calves. . ……. | $ _____ |
| C. | Inventory change in all other current assets, including cash, accounts receivable, prepaid expenses, etc. ……. | $ _____ |
| D. | Change in accounts payable, accrued interest, and other expense items. …… | $ _____ |
| E. | Change or decrease in capital items, including machinery breeding stock, buildings, improvements, etc. ……. | $ _____ |
| F. | Farm Profitability or Net Farm Income, the sum total of items A. through E. …….. | $ _____ |