Ag Decision Maker

File C3-26
September 2016
www.extension.iastate.edu/agdm

Converting Cash to Accrual Net Farm Income

Net farm income is an important measure of the financial success of a farm business in a given year. It is the difference between the value of all the products the farm produced and the cost of the resources that were used to produce them.

Income produced in the business of farming is considered taxable income, and must be reported to the Internal Revenue Service (IRS) on certain standard forms. Often this is the most readily available data about revenue and costs generated each year. However, the IRS allows farmers to use the cash method of accounting for their tax returns, and most choose this option. Cash accounting requires income from selling farm products to be reported in the year they are sold, which may differ from the year in which they were produced. Likewise, under cash accounting the costs of farm inputs and services are reported in the year in which they are paid for, which may differ from the year in which they are used. This results in a taxable net income value that may not reflect the true economic profit generated by the farm in that year.

The IRS also gives farmers several choices of how to depreciate the cost of purchasing durable assets such as machinery and buildings. Some of these choices allow the cost of such assets to be deducted more quickly than their actual value diminishes due to use and obsolescence. In particular, the Section 179 expensing option allows up to the entire initial cost of certain assets to be deducted in the year they are purchased. This substantially distorts the true economic cost of such assets, overstating it in the first year and understating it in subsequent years.

Fortunately, a few simple adjustments can be made to a cash-based statement of income and expenses to convert it to an *accrual statement*, which allocates income to the year in which it was generated and expenses to the year in which they were incurred.

Schedule F Information

Schedule F from the Federal farm income tax return contains a summary of cash income and expenses. This information can be combined with several adjustments, as shown on the worksheet at the end of this information file. On line 1 of the worksheet for *net farm profit or loss,* start by entering the value shown on line 34 of Schedule F.

The IRS does not allow the cost of feeder livestock or other assets purchased for the purpose of eventual resale to be deducted until the tax year in which they are sold. This may be the same year, but in other cases animals are carried over from one tax year to the next. Schedule F does not recognize the increase in value of feeder livestock from the time they were purchased to the end of the year, even though the cost of feed and other inputs used to produce that gain is included under Farm Expenses.

In order to subtract the cost of feeder livestock in the year of purchase, the value reported on line 1b of Schedule F must be added back to *net farm profit* and the total cost of feeder livestock purchased during the tax year, including those still present on the farm, must be subtracted in its place (line 2). This value is not found anywhere on the tax return, so it must be calculated from farm records.

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The IRS allows the cost of purchased breeding livestock to be depreciated, even though they may actually increase in value if they are acquired at a young age. Sales and purchases of breeding livestock are not included on Schedule F, although a portion of their purchase cost may be included on line 14 under *depreciation*. However, it is more straightforward to treat breeding livestock in the same manner as other livestock, by combining purchases, sales and changes in inventory value. Sales of breeding livestock can be found on IRS Form 4797, Sales of Business Property, under the *gross sales price* columns, or can come from farm records. Purchases of breeding livestock may be found on the farm's tax depreciation schedule, or can be calculated from farm records (line 3).

Balance Sheet Information

The value of farm products that have been produced but not yet sold can be found in the *current assets* section of a farm net worth statement or balance sheet. Income that has been earned but not yet collected is also found there, under Accounts Receivable. The only current asset that should not be included is *cash on hand*, because that has already been included in the cash income from Schedule F. Therefore, the adjustment can be to add all current assets from the ***ending*** net worth statement except cash on hand. Likewise, the value of all *current assets* except *cash on hand* from the ***beginning*** balance sheet should be subtracted, because it represents income from products that were actually produced in the previous year. The net adjustment can be either positive or negative, depending on whether inventories and accounts receivable increased or decreased from the end of one year to the end of the next year (line 4). Note that a change in the value of grain and livestock inventories can come about from either a change in the quantity on hand or a change in the price used to value the inventory, or both.

The above adjustment also has the effect of allocating expenses that are paid in advance of when they are used, such as *prepaid expenses* and *supplies on hand*, to the proper accounting year.

A similar adjustment can be made for the value of breeding livestock. Simply subtract the value of all breeding livestock on the farm at the beginning of the accounting year from the same value at the end of the accounting year. The adjustment can be either positive or negative (line 5). Breeding livestock are usually listed under *intermediate assets* or *fixed assets*. A similar adjustment can be made for the value of retained cooperative dividends (line 6). The changes in the value of assets, such as machinery and buildings, are included in the depreciation expense calculation.

Some expenses may be incurred in one accounting year but not paid until the next year. These can be found under the *current liabilities* section of the balance sheet, as accounts payable, accrued interest or farm taxes due. Subtract the total value of these items at the end of the year from their total value at the beginning of the year to compute the adjustment (line 7). Do not include the principal portions of loans or contracts owed, because repayment of principal is not considered an expense for accounting or tax purposes.

The final adjustment concerns depreciation expense. Start by adding back the income tax depreciation value found on line 14 of Schedule F. This is usually not an accurate estimate of decrease in value of depreciable assets. A reasonable estimate of "economic depreciation" can be found by taking 10 percent of the value of machinery and equipment at the end of the year and 5 percent of the value of buildings and other improvements. First adjust the year-end values found on the ending net worth statement to their pre-depreciation values by dividing them by 0.90 (machinery) or 0.95 (buildings), then multiply those values by 0.10 or 0.05, respectively, to estimate economic depreciation. Subtract these values from the income tax depreciation value to find the adjustment to net farm income (line 8).

Adding all the adjustments described above to the Schedule F net farm profit or loss will result in an estimate of ***accrual net farm income from operations*** of the farm (line 9). This is a more accurate measure of the profitability of the farm business for that year, and is a useful value to compare to results from past years or other farms.

Caveats

Occasionally income tax return values may not give a completely accurate picture because the IRS allows or requires some income to be reported on Schedule F even if cash has not been received, under the concept of "constructive receipt." Examples are crop insurance proceeds and some USDA program payments. This same income may also show up under accounts receivable on the farm balance sheet, and thus could be double counted. In such cases exclude it from *net farm profit* on Schedule F.

Some farms may choose to report income and expenses for tax purposes using accrual accounting methods. In that case, the gross income value shown on line 50 of Schedule F can be entered on line 1 of the worksheet. The adjustments in lines 2, 3 and 5 can be omitted, and the adjustment in line 4 can exclude inventories of grain and livestock.

The net worth statements used to make the accrual adjustments may not have been compiled on the exact dates that correspond to the beginning and end of the income tax accounting year. Transactions that occur after the tax year ends but before the balance sheet is compiled may introduce errors into the calculations. For greater accuracy, net worth statements should be compiled "as of" the beginning of the new tax year (usually January 1) as closely as possible.

Despite these shortcomings, adjusting the income tax estimates of income and expenses based on information from the farm balance sheets and economic depreciation calculations will provide a much more accurate picture of the profitability of the farm business during the past year than tax records alone.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Cathann A. Kress, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

Accrual Net Farm Income Worksheet

The following worksheet uses information from a farm's Federal income tax return and net worth statements taken at the beginning and ending of the accounting year to derive an estimate of accrual net farm income for that year.

Name of farm or owners ________________________________ Year __________

1. Net farm profit or loss from Schedule F, line 34 __________

2. Adjust for cost of purchased ***feeder livestock***:
   cost of feeder livestock sold (Schedule F, line 1b) + __________
   minus cost of feeder livestock purchased this year - __________
   (from farm records) = __________

3. Adjust for sales and purchases of ***breeding livestock***:
   sales of breeding livestock (from IRS Form 4797) + __________
   minus cost of breeding livestock purchased this year - __________
   = __________

4. Adjust for change in inventory of all ***current assets*** except cash on hand:
   ending current assets __________ - cash __________ = + __________
   minus beg. current assets __________ - cash __________ = - __________
   = __________

5. Adjust for change in ***breeding livestock inventory***:
   ending value __________ minus beginning value __________ = __________

6. Adjust for change in retained ***cooperative dividends***:
   ending value __________ minus beginning value __________ = __________

7. Adjust for change in ***accrued interest***, ***accounts payable***, and ***farm taxes due***:
   beginning total __________ minus ending total __________ = __________

8. Adjust for extraordinary tax ***depreciation*** deduction:
   add back income tax depreciation from Schedule F, line 14 + __________
   minus (ending value of machinery __________ / 0.90) x .10 = - __________
   minus (ending value of buildings __________ / 0.95) x .05 = - __________
   = __________

9. **Accrual net farm income from operations** (sum lines 1 through 8) __________

Example Accrual Net Farm Income Worksheet

Name of farm or owners Cyclone Farm Year 2017

1. Net farm profit or loss from Schedule F, line 34			101,920
2. Adjust for cost of purchased ***feeder livestock***:			
cost of feeder livestock sold (Schedule F, line 1b)	+	149,209	
minus cost of feeder livestock purchased this year	-	125,600	
(from farm records)		=	23,609
3. Adjust for sales and purchases of ***breeding livestock***:			
sales of breeding livestock (from IRS Form 4797)	+	5,680	
minus cost of breeding livestock purchased this year	-	6,900	
		=	(1,220)
4. Adjust for change in inventory of all ***current assets*** except cash on hand:			
ending current assets 850,384 - cash 10,256 =	+	840,128	
minus beg. current assets 913,828 - cash 6,146 =	-	907,682	
		=	(67,554)
5. Adjust for change in ***breeding livestock inventory***:			
ending value 222,600 minus beginning value 201,000		=	21,600
6. Adjust for change in retained ***cooperative dividends***:			
ending value 28,861 minus beginning value 24,581		=	4,280
7. Adjust for change in ***accrued interest***, ***accounts payable***, and ***farm taxes due***:			
beginning total 32,035 minus ending total 41,298		=	(9,263)
8. Adjust for extraordinary tax ***depreciation*** deduction:			
add back income tax depreciation from Schedule F, line 14	+	45,200	
minus (ending value of machinery 255,240 / 0.90) x .10 =	-	28,360	
minus (ending value of buildings 138,510 / 0.95) x .05 =	-	7,290	
		=	9,550
9. **Accrual net farm income from operations** (sum lines 1 through 8)			82,922

View the Schedule F (Form 1040) and Financial Statements associated with the example shown above.