

Accrual Basis Income for Cotton Farmers

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Introduction

Many cotton farmers today rely on operating loans to buy their seeds, fertilizer and other inputs for their crops. Cotton farmers also need loans for longer term purchases such as equipment and land. Often lenders use three to five years of tax records to approximate net farm income. This average of taxable income may not give lenders a true picture of net farm income, thus lenders may be reluctant to grant farmers credit.

How can cotton farmers better prepare to get a loan to pay for their inputs and other purchases? By preparing their farm's income statement on an accrual basis rather than a cash basis, producers can show their true net income from the year's operations, rather than just the amount of cash received or taxable income in that year. With a more accurate picture of net farm income, lenders are more willing to grant farmers the credit they need.

Most cotton farmers prepare their income statements on a cash basis. This means that revenues are recognized in the period in which they are received, and expenses are recognized in the period in which they are paid. Cash basis accounting is okay if the entire cotton farmer's revenue is received in the period which the crop is produced, but what about when the revenue from a crop isn't received until the next accounting period (i.e., cotton is not sold until after the first of the year)? Also, purchasing farm inputs to use in the fall to use on next year's crop can distort net farm income. These two scenarios illustrate when accrual basis accounting comes in handy.

Accrual basis accounting correctly matches income and expenses to the period in which they are incurred. Accrual accounting uses inventory change as a revenue item. It uses the difference between beginning and ending inventory as either an addition or subtraction to cotton cash revenue. If cotton inventories have increased during the year, then cash receipts understate real revenue. The increase in inventory is added to cash receipts. If the inventory of cotton decreases from the start of the year to the

end of the year, then cash receipts overstate actual revenue. In this case the difference is subtracted from cash receipts.

Another difference in the accrual basis income statement and the cash basis income statement is in how expenses are handled. On a cash basis income statement, expenses are recorded in the period paid. On the accrual basis income statement, expenses are recorded in the period in which the revenue they relate to is reported. Just like the cotton inventory changes affect revenue, changes in investments of expense items also affect revenue. For example, fertilizer purchased in the fall for use next spring would count as an expense next year with accrual basis accounting.

Switching to an accrual basis income statement may sound complicated, but it is relatively easy. While the change in crop inventories is easier to explain and understand, the explanation of other inventory changes is not so straight forward. However, if the following procedure is followed, an accrual adjusted income statement can be easily calculated. Converting a farm's income statement from a cash basis to accrual-adjusted basis requires only minor adjustments to cash receipts, cash disbursements, and cash income taxes.

Procedure

To begin, start with a cash basis income statement. Farmers already do this when they pay taxes. The schedule F is basically a cash basis income statement. Also needed is the previous beginning and ending balance sheet for the year.

There is a difference in an accrual basis income statement, and an accrual adjusted income statement. Accrual basis accounting is a whole system used to account for revenues and expenses. This is where revenues are accounted for in the period they are received, and the expenses are accounted for in the period in which the respective revenue is received. An accrual adjusted income

statement simply includes some minor adjustments to a cash basis income statement to acquire the accrual adjusted net income. Accrual and accrual-adjusted income both provide the same net farm income even though the procedures are different. Cash basis accounting recognizes revenues in the period in which they are received and expenses in the period in which they are paid. Through a few simple adjustments, the cotton operation's true net income can be found.

The first step in switching to an accrual basis income statement is to adjust the cash receipts to get accrual-adjusted gross revenues. This is done by taking into account changes in crop and livestock inventory and accounts receivable.

Steps:

- 1a) Start with cash livestock and crop receipts.
- 1b) Add crop and livestock inventories from the end of year balance sheet.
- 1c) Add accounts receivable from the end of the year balance sheet.
- 1d) Subtract crop and livestock inventories from the beginning of the year balance sheet.
- 1e) Subtract accounts receivable from the beginning of the year balance sheet.

The resulting number is the accrual-adjusted gross revenue.

Table 1. Gross Revenue Adjustments

Cash Receipts

- beginning inventories
- + ending inventories
- beginning accounts receivable
- + ending accounts receivable

Gross Revenue

The second step is to adjust cash expenses to reflect the accrual adjustment. Although the process is not that difficult, it may not be as intuitive as the adjustment in crop inventory. Follow the steps carefully because sometimes the beginning of the year values are added and other times the end of the year values are added. The same distinctions apply to subtractions.

Steps:

- 2a.) Start with total cash expenses.

- 2b.) Add beginning balance sheet numbers for supplies inventory, prepaid expenses, and investment in growing crops.
- 2c.) Add ending balance sheet numbers for accounts payable, accrued tax liability and accrued interest.
- 2d.) Subtract ending balance sheet numbers for supplies inventory, prepaid expenses, and investment in growing crops.
- 2e.) Subtract beginning balance sheet numbers for accounts payable, accrued tax liability and accrued interest.

This number is the accrual-adjusted operating expense.

Table 2. Expense Adjustments

Cash Expenses

- + beginning supplies inventories
- ending supplies inventory
- + beginning prepaid expenses
- ending prepaid expenses
- + beginning growing crops
- ending growing crops
- + ending accounts payable
- beginning accounts payable
- + ending accrued interest
- beginning accrued interest
- + ending accrued tax liability
- beginning accrued tax liability

Partial Operating Expenses and Interest

The third step is the simplest. Depreciation is simply added to partial operating expenses and interest to get total expenses. Depreciation is a noncash operating expense, but it is still assigned a value and must be included into the income statement. This is because depreciation accounts for the using up of a piece of equipment's useful life. Depreciation is considered an expense because the farmer is using up the value of the equipment through depreciation. While depreciation is a noncash expense and never shows up in a cash flow statement, depreciation does appear in a farmer's tax returns (Schedule F).

Now the accrual adjusted net income before taxes may be calculated. This number is also called the Net Farm Income From Operations (NFIFO) on an accrual-adjusted income statement. Simply take the gross revenue and subtract both the partial operating expenses plus interest (from Table 2) and depreciation.

Table 3.

Gross Revenue
- partial operating expense and interest
- depreciation
Net Farm Income From Operations

Net Farm Income From Operations (NFIFO) is important because this is the net income generated from ongoing farm operations. While this is not yet Net Farm Income (NFI), it is income that is a consistent measure each year. NFI is calculated from NFIFO by simply adding or subtracting any gains or losses from the sale of capital items. Farmers do pay taxes on NFI. However, the sale of capital items and whether there is a gain or loss on the sale is not very predictable. For that reason, NFIFO is often a more useful number when examining the health of a cotton farm.

Once all these numbers are put together on paper, it creates a nice way to portray the farming operation's true income (the accrued adjusted net farm income). This number will more accurately reflect the cotton operations net income for that accounting period. This allows the cotton farmer to better see what adjustments can be made to help future farm income, and creates a nice way to show lenders the accurate net farm income from operations. With an accrued adjusted net farm income, lenders are less reliant on averaging five years worth of tax records to get a picture of farm income.

Example

An example should help demonstrate how accrual adjustments can affect net farm income. For example, a cotton farm has a cash based net farm income of \$50,000. This would be calculated by keeping track of all cash cotton sales, other agricultural product sales, government payments, all cash expenses, and depreciation for the year. The \$50,000 would also be the bottom line number on a Schedule F tax return.

However, real or accrued adjusted net farm income will likely be different because of inventory and other adjustments that a typical balance sheet would reveal. Table 4 shows how these balance sheet adjustments affect net farm income based on the two example balance sheets shown on the back page.

As the example shows, the adjustments can start from cash-based net farm income. The adjustments to revenue are added and the adjustments to expenses are subtracted to get accrual-adjusted net farm income (the expense adjustments are really added to expenses but are considered a subtraction when combining directly with cash income).

Table 4.

Cash-Based NFI		\$50,000
Revenue Adjustments		
- beginning inventories	-50,000	
+ ending inventories	85,000	
- beginning accounts receivable	-2,000	
+ ending accounts receivable	800	
TOTAL changes to revenue		33,800
Expenses Adjustments		
+ beginning supplies inventories	54,007	
- ending supplies inventory	-56,100	
+ beginning prepaid expenses	35,782	
- ending prepaid expenses	-29,200	
+ beginning growing crops	41,500	
- ending growing crops	-41,000	
+ ending accounts payable	13,000	
- beginning accounts payable	-12,370	
+ ending accrued interest	10,600	
- beginning accrued interest	-11,547	
+ ending accrued tax liability	10,750	
- beginning accrued tax liability	-12,158	
TOTAL changes to expenses		3,264
Accrual-Adjusted NFI		\$80,536

Note: ADD "TOTAL changes to revenue" and SUBTRACT "TOTAL changes to expenses" from Cash-Based NFI to get Accrual-Adjusted NFI

In this example, accrual-adjusted revenue is greater than cash revenue because more cotton was produced than actually sold. The cotton not sold shows up as an increase in ending inventories. Here, cotton inventories changed from \$50,000 at the beginning of the year to \$85,000 at the end of the year. This extra \$35,000 is the value of cotton produced during the year but not sold. Unless these inventory changes are accounted for by doing an accrual adjusted income statement, a lender would never know this revenue was generated.

Other changes can be seen by examining Table 4 on a line by line basis. As the example shows, prepaid expenses decreased during the year (from \$35,782 to \$29,200). This type of change actually means an expense such as fertilizer was higher than the amount of cash paid for fertilizer. In other words, the farmer's inventory of fertilizer was decreased. These types of changes are not very intuitive but are necessary to get a correct net farm income.

Completing an accrual-adjusted net farm income statement will not always result in more income than a cash-based statement. However, it will give a lender a much more accurate picture of income. The better a lender understands a business, the more likely the lender is to approve a loan.

Table 5. Beginning of Year Balance Sheet

	Market Value		Market Value
Current Assets		Current Liabilities	
Cash, Savings, & CD's	5,000	Accounts Payable	12,370
Investment in Growing Crops	41,500	Lease Payment	0
Accounts Receivable	2,000	Loans Due within 12 months	142,604
Market Livestock	0	Principal due within 12 months	30,921
Crops and Feed	50,000	Accrued interest	11,547
Prepaid Expenses	35,782	Accrued Tax liability	12,158
Supplies	54,007	Other	169
Total Current Assets	188,289	Total Current Liabilities	209,769
Non Current Assets		Non-Current Liabilities	
Breeding livestock	0	Real Estate Mortgage	117,208
Machinery and Equipment	600,000	Intermediate notes	64,103
Buildings and improvements	69,700	Life insurance policy loans	3,149
Land	700,000		
Other	1,000		
Total Non-Current Assets	1,370,700	Total non-current liabilities	184,460
		Total Liabilities	\$394,229
		Owner's Equity	\$1,164,760
Total Assets	\$1,558,989	Total Liabilities & Owners Equity	\$1,558,989

Table 6. End of Year Balance Sheet

	Market Value		Market Value
Current Assets		Current Liabilities	
Cash, Savings, & CD's	5,000	Accounts Payable	13,000
Investment in Growing Crops	41,000	Lease Payment	0
Accounts Receivable	800	Loans Due within 12 months	142,604
Market Livestock	0	Principal due within 12 months	30,921
Crops and Feed	85,000	Accrued interest	10,600
Prepaid Expenses	29,200	Accrued Tax liability	10,750
Supplies	56,100	Other	169
Total Current Assets	217,100	Total Current Liabilities	208,044
Non Current Assets		Non-Current Liabilities	
Breeding livestock	0	Real Estate Mortgage	117,208
Machinery and Equipment	600,000	Intermediate notes	64,103
Buildings and improvements	69,700	Life insurance policy loans	3,149
Land	700,000		
Other	1,000		
Total Non-Current Assets	1,370,700	Total non-current liabilities	184,460
		Total Liabilities	\$392,504
		Owner's Equity	\$1,195,296
Total Assets	\$1,587,800	Total Liabilities & Owners Equity	\$1,587,800