

## Risk Management

# Financial Management: Cash vs. Accrual Accounting

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Selecting a record-keeping system is an important decision for agricultural producers. The system should help with decision making in a risky environment and calculate taxable income. Most producers keep their records with the cash receipts and disbursements method or with an accrual method.

Either method should be acceptable for calculating taxable income (except for corporate taxpayers who have revenues exceeding \$25,000,000). However, it is not acceptable to keep books throughout the year using one method of accounting and then convert at year-end to another method, solely because the second method might compute taxable income more favorably.

The main difference between accrual basis and cash basis accounting is the time at which income and expenses are recognized and recorded. The cash basis method generally recognizes income when cash is received and expenses when cash is paid. The accrual method recognizes income when it is earned (the creation of assets such as accounts receivable) and expenses when they are incurred (the creation of liabilities such as accounts payable).

Accrual accounting is more accurate in terms of net income because it matches income with the expenses incurred to produce it. It is also more realistic for measuring business perfor-

mance. A business can be going broke and still generate a positive cash basis income for several years by building accounts payable (accruing but not paying expenses), selling assets, and not replacing capital assets as they wear out.

However, most farmers and ranchers use cash basis accounting because: 1) the accounting principles of an accrual system can be complex; 2) given the cost of hiring accountants to keep their records, accrual accounting is more expensive; and 3) cash basis accounting is more flexible for tax planning.

## *Getting the Best of Both Systems*

There is a process by which cash basis income and expense data can be adjusted to approximate accrual income. This can be very beneficial to producers, giving them the simplicity and tax flexibility of using cash accounting and the ability to evaluate profit more accurately. The process has been recommended by the Farm Financial Standards Council (FFSC), which is made up of farm financial experts from across the U.S. The only requirements for using this process are accurate records of cash receipts and cash disbursements for the period being analyzed, and complete balance sheets (including accrual items) as of the beginning and end of the period.



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The process yields an “accrual adjusted” income statement. It differs from accrual income in that inventories may be valued at their current market value rather than their cost, and work in process (e.g., growing crops) is valued by direct costs only (not including indirect labor and allocated overhead).

The process for adjusting cash basis income to approximate accrual income is outlined in Table 1. “Beginning” and “Ending” refer to information from the balance sheets as of the beginning and end of the accounting period.

**Table 1.** Adjusting cash basis records to approximate accrual basis records.

Cash basis	Adjustments to cash basis	Equals accrual basis
Cash receipts	<ul style="list-style-type: none"> <li>- Beginning inventories</li> <li>+ Ending inventories</li> <li>- Beginning accounts receivable</li> <li>+ Ending accounts receivable</li> </ul>	Gross revenue
Cash disbursements	<ul style="list-style-type: none"> <li>- Beginning accounts payable</li> <li>+ Ending accounts payable</li> <li>- Beginning accrued expenses</li> <li>+ Ending accrued expenses</li> <li>+ Beginning prepaid expenses</li> <li>- Ending prepaid expenses</li> <li>+ Beginning supplies (fuel, chemical, etc.)</li> <li>- Ending supplies</li> <li>+ Beginning investment in growing crops</li> <li>- Ending investment in growing crops</li> </ul>	Operating expenses
Depreciation expense	No adjustment made (see Note 1)	Depreciation expense
Cash net income (pre-tax)		Accrual adjusted net income (pre-tax)

Cash basis	Adjustments to cash basis	Equals accrual basis
Cash income & Social Security (S.S.) taxes	<ul style="list-style-type: none"> <li>- Beginning income taxes and S.S. taxes payable</li> <li>+ Ending income taxes and S.S. taxes</li> <li>- Beginning current portion of deferred tax liability</li> <li>+ Ending current portion of deferred tax liability (see Note 2)</li> </ul>	Accrual adjusted income taxes and S.S. taxes
Cash net income (after-tax)		Accrual adjusted net income (after-tax)

**Note 1:** Because depreciation is a noncash expense, technically it would not be reflected on a cash basis income statement. Instead, the statement would show the cash payments for property, facilities and equipment rather than allocating the cost of the asset over its useful life. However, because the Internal Revenue Code requires capital assets to be depreciated, even for cash basis taxpayers, the common practice is to record depreciation expense for both cash basis and accrual basis income accounting.

**Note 2:** It is possible to have an income tax and Social Security tax receivable (refund due) or a deferred tax asset. In these instances the sign (+/-) of the period would be reversed when making the accrual adjustments.

In order to track the logic behind the cash-to-accrual adjustment process, consider the following example of a cash-to-accrual adjustment on grain sales.

**Table 2.**

<b>Cash receipts from grain sales this year</b>	\$150,000
less: Beginning grain inventory (produced in prior year)	-\$40,000
plus: Ending grain inventory (current year production not sold yet)	+\$28,000
equals: Accrual grain revenue (approximate value of current year production)	\$138,000

Consider a second example of an expense adjustment for accrued interest.

**Table 3.**

<b>Cash disbursements for interest paid this year</b>	\$36,000
less: Beginning accrued interest (interest owed but not paid in prior year)	-\$9,000
plus: Ending accrued interest (interest owed but not paid in current year)	+\$7,000
equals: Accrual interest expense (approximate cost of borrowed funds in current year)	\$34,000

The same logic applies to the cash-to-accrual adjustment for other accrual items. The rule to remember when making the adjustment is that an increase (beginning to ending) in an accrual-type asset item will cause net income to increase, while an increase in an accrual-type liability item will cause net income to decrease.

Review the example income statements for Cash Grain Farms (Table 4) to see the differences between statements based on accrual-adjusted information and statements based on cash accounting.

### Comparing Cash Basis to Accrual-Adjusted Basis

Cash Grain Farms (Table 4) appears to be moderately profitable on a cash basis. However, after adjusting the cash basis income statement

to approximate an accrual basis income statement for the same period, net income after tax increased from \$18,000 to \$46,000. Because of the accrual adjustments, gross revenues were greater by \$25,000 (from \$175,000 to \$200,000), while total expenses were less by \$19,000 (from \$149,000 to \$130,000). However, because of the accrued and deferred income taxes, the expense for income taxes is increased by \$16,000 (from \$8,000 to \$24,000).

After making the accrual adjustments to the income statement, Cash Grain Farms was shown to be more profitable than had been portrayed by the cash basis method of accounting. The more critical situation would occur if the accrual-adjusted net income showed the business to be less profitable than the producer may have been led to believe by relying solely on cash basis income statements.

**Table 4.** Income statements: cash basis (left) and accrual-adjusted basis (right).

Cash Grain Farms (cash) Year ending December 31		Cash Grain Farms (accrual) Year ending December 31	
<b>Receipts</b>		<b>Revenues</b>	
Cash grain sales	\$150,000	Cash receipts from grain sales	\$150,000
Government program payments	\$25,000	Change in grain inventory	+ \$20,000
Total cash receipts	\$175,000	Government program payments	\$25,000
		Change in accounts receivable	+ \$5,000
		<b>Gross revenues</b>	<b>\$200,000</b>
<b>Expenses</b>		<b>Expenses</b>	
Cash operating expenses	\$85,000	Cash distributions for operating expenses	\$85,000
Interest paid	\$37,000	Change in accounts payable	– \$12,000
<b>Total cash expenses</b>	<b>\$122,000</b>	Change in prepaid expenses	+ \$1,000
Depreciation	\$27,000	Change in unused supplies	– \$2,000
<b>Total expenses</b>	<b>\$149,000</b>	Change in investments in growing crops	– \$4,000
		Depreciation	– \$27,000
		<b>Total operating expenses</b>	<b>\$95,000</b>
Net farm income from operations (cash basis)	\$26,000	Interest paid	\$37,000
Gain/loss on sale of farm capital assets	\$0	Change in accrued interest	– \$2,000
Net farm income, before tax (cash basis)	\$26,000	Accrual interest expense	\$35,000
Income taxes & S.S. taxes paid	\$8,000	<b>Total expenses</b>	<b>\$130,000</b>
<b>Net farm income, after tax (cash basis)</b>	<b>\$18,000</b>	Net farm income from operations	\$70,000
		Gain/loss on sale of farm capital assets	\$0
		Net farm income	\$70,000
		Income taxes & S.S. taxes paid	\$8,000
		Change in income taxes & S.S. taxes payable	
		Changes in current portion of deferred taxes	+ \$3,000
		Accrual income taxes & S.S. taxes	
		<b>Net farm income, after tax (accrual basis)</b>	<b>+ \$13,000</b>
			\$24,000
			\$46,000

Remember, because the IRS requires capital assets (machinery, equipment, buildings, etc.) to be depreciated over the useful life of the assets, the common practice, even with cash basis accounting, is to record a depreciation charge. Therefore, there is no difference in the way depreciation is handled between cash and accrual accounting systems.

As this illustration shows, computing income on a cash basis can misrepresent true profitability for an accounting period when there is a time lag between the exchange of goods and services and the related cash receipt or cash disbursement. Such distortion can be substantially reduced by also considering the net changes in certain balance sheet accounts.

A quick way to convert the cash basis net income of \$18,000 to the accrual-adjusted income of \$46,000 is simply to add or subtract the various net changes in inventories, accounts receivable, accounts payable, and other noncash transactions that affect the true profitability of the operation. The net changes affecting the true net income of Cash Grain Farms are shown in Table 5.

**Table 5.** Net changes in noncash transactions.

		End year	Net change
<b>Inventories</b>			
Grain	60,000	80,000	+20,000
Supplies purchased	8,000	10,000	+ 2,000
Investment in growing crops	16,000	20,000	+ 4,000
Accounts receivable	22,000	27,000	+ 5,000
Prepaid expenses	4,000	3,000	- 1,000
Accounts payable	17,000	5,000	-12,000
Accrued interest	23,000	21,000	-2,000
Income taxes and S.S. taxes payable	6,000	9,000	+3,000
Current portion of deferred tax liability	21,000	34,000	+13,000

Table 6 presents a standard, simplified format for converting a cash basis income statement to an accrual-adjusted income statement using the net changes in the balance sheet accounts. This abbreviated format is useful if the objective of the analysis is only to determine the approximate level of profitability after matching revenues with the expenses incurred to create the revenues.

**Table 6.**

<b>Cash Grain Farms</b>	
January 1 to December 31	
<b>Assets</b>	
Cash net farm income (after-tax)	\$18,000
Increase in inventory	26,000
Decrease in inventory	( ) *
Increase in accounts receivable	5,000
Decrease in accounts receivable	( ) *
Increase in prepaid expenses	
Decrease in prepaid expenses	(1,000)
<b>Liabilities</b>	
Decrease in accrued interest	2,000
Increase in accrued interest	( ) *
Decrease in accounts payable	12,000
Increase in accounts payable	( ) *
Decrease in income and S.S. taxes payable	
Increase in income and S.S. taxes payable	(3,000)
Decrease in deferred tax liability	(13,000)
Increase in deferred tax liability	
Accrual adjusted net farm income (after-tax)	\$46,000

\*The parentheses signify the balance sheet accounts that decrease true net income. These entries are to be subtracted when calculating the accrual-adjusted net income from cash basis income.

In summary, an agricultural producer can enjoy both the simplicity of cash basis accounting and the correctness of accrual accounting by:

- maintaining complete cash basis income (receipts) and expense (disbursements) records throughout the year;
- preparing a complete balance sheet (including accrual items) at the beginning and end of each year, and then making the simple conversion of the resulting cash basis net income to determine the accrual-adjusted net income.

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