Understanding and Creating Financial Statements

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Tennessee Master Farm Manager

66,670

Expert Resource

- UT MANAGE Program
  - website: https://arec.tennessee.edu/extension/manage/

Measuring Performance

- The financial statements are the way to measure *financial performance*

- *You can't manage what you don't measure!*

Purpose

- Measuring profit and assess financial conditions
  - Inform on areas to improve and guide in future decisions

Purpose

- Profitability of individual decisions
  - Soybeans vs. corn
  - Buy heifers vs. raise heifers
  - Helps eliminate the least profitable parts of your farm and redirect resources to more profitable enterprises
- Analysis of new investment
  - Machinery or land
- Assist in obtaining loans
  - Avoid obtaining risk loans

Where we're headed

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Balance sheets

Income Statements

What are they?
What do they measure?
How do we use them?

Balance Sheet

Balance Sheet

Asset
A resource with economic value

Liability
Debts owed

Equity or Net worth
Value of owned assets

What are they?

- Summarizes the financial condition of a business *at a point in time*
  - Primarily done at the end of the accounting period
  - Shows assets, what is owned (net worth or equity) and what is owed (liabilities)

Measurements

- Solvency is the **long-run** ability to meet financial commitments (net worth).

- Liquidity is the **short-run** ability to meet financial commitments and to cope with unexpected financial needs (how quick can you get to your money).

Name	AREC FARMS

Farm Assets

Current Assets	Value
Cash and Checking account	
Crops held for Sale/Feed	
Investment in growing crop	
Commerical Feed on Hand	
Prepaid Expense	
Market livestock	
Supplies on Hand	
Accounts Recievable	
Other Current Assets	
Total Current Assets	$ -

Noncurrent Assets	Cost	Market
Unpaid Coop. distributions		
Breeding Livestock		
Machinery and Equipment		
Building & Improvements		
Farmland		
Farm Securities		
Other noncurrent assets		
Total Noncurrent assets	$ -	$ -
Total Assets	$ -	$ -

Farm Liabilities

Current Liabilities	Value
Accounts Payable	
Income Tax Payable	
Remaining Principal Balance (< 1 year)	
Accrued Interest (short and long)	
Principal Due in 12 months	
Other Current Liabilities	
Total Current Liabilities	$ -
Noncurrent liabilities	
Remaining Principal Balance (>1 year)	
Other noncurrent Liabilities	
Total Noncurrent liabilities	$ -
Cost Based Total Liabilities	$ -
Market Based Total Liabilities	$ -
Deferred Liabilities	$ -
Market Valuation Net Worth Equity	$ -
Net Worth (Equity)	$ -

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Current Assets

- Cash/checking account
- Anything sold within the next year as part of normal business
  - Calves you plan on selling but haven't yet
  - Stored grain

Current Assets

- Anything in the barn you plan on using or feeding
  - Hay
  - Fuel, oil, supplies, tools,.. Anything with a value
- Prepaid expense – a payment made for a product or service in an accounting period before the one in which it will be used to produce revenue
  - Seed, fertilizer, etc.

Current Assets

- Accounts receivable – revenue for a product that has been sold or service provided but for which no payment has yet been received
  - Custom work
  - Selling hay

Name	**AREC FARMS**	

Farm Assets

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Prepaid Expense	
Market livestock	
Supplies on Hand	
Accounts Recievable	
Other Current Assets	
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Noncurrent Assets	**Cost**	**Market**
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Net Worth (Equity)	$ -

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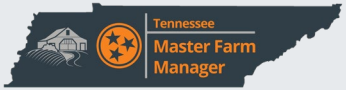
Non-Current Assets

- Noncurrent assets have useful life greater than one year
  - Selling would likely disrupt the business.
- Market Value: fair market price
- Cost or book: value of the asset at original cost less depreciation.
  - reflects a decrease in the value of an asset used to produce a revenue
  - Depreciation is a noncash expense that reflects a decrease in the value of an asset used to produce a revenue

Market vs. Cost example

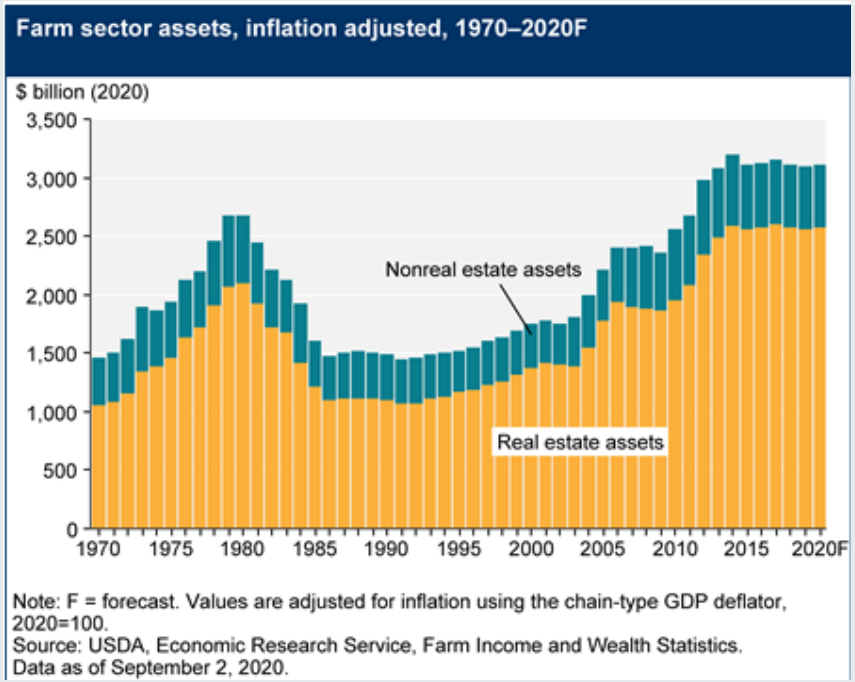
- Buy a brand-new pickup $50,000
- Use it for 5 years on the farm
  - It loses value every year you use it (depreciation)
  - Accountant will tell you how much value it uses annually, lets say $5,000 annually
- After 5 years, it's worth by your accountant calculation $25,000 ($50,000 - $5,000x5)
- However, you could sell it for $27,000
- Market value says that truck is worth 27k while cost says it's worth 25k

Noncurrent Asset Valuation



- Cost-basis balance sheets conform to general accounting standards
- Market-basis balance sheets more accurately reflect the actual financial position
- FFSC says both types of balance sheets are needed for proper business analysis

US Farm Assets



- 0.4% increase from 2019
- 3% increase in nonreal estate assets

Name	**AREC FARMS**	

Farm Assets

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Cost Based Total Liabilities	$ -
Market Based Total Liabilities	$ -
Deferred Liabilities	$ -
Market Valuation Net Worth Equity	$ -
Net Worth (Equity)	$ -

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Liability

- Current liabilities are financial obligations that will become due and payable within one year from the date on the balance sheet.

- Non-current liabilities are financial obligations will become due and payable some time after one year from the date on the balance sheet.

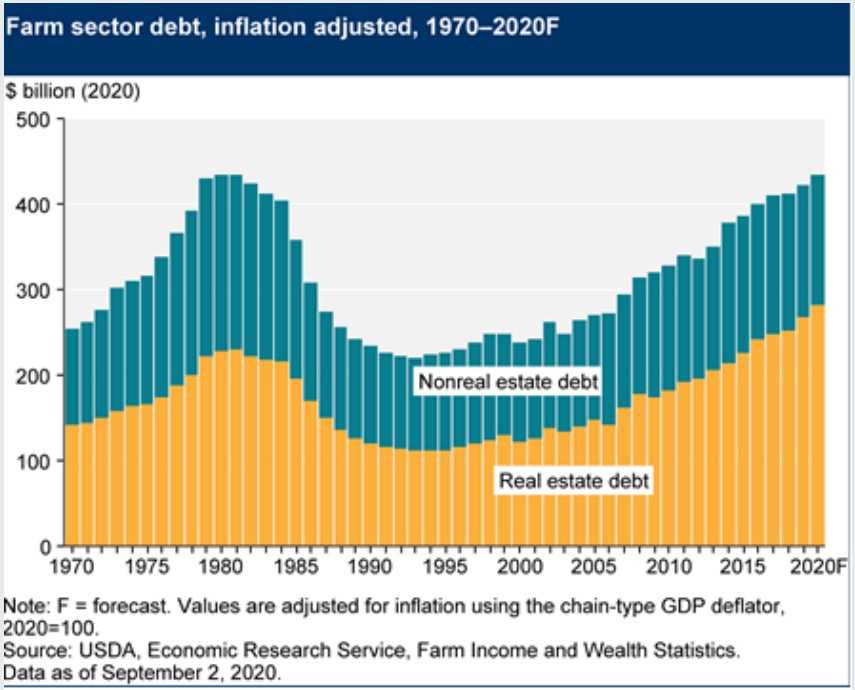
Current Liability

- Account payable – an expense that has been incurred but not yet paid
  - Feed purchases (60-90 days)
- Accrued expense – an expense that accrues or accumulates daily but has not yet been paid because it isn't due
  - Interest on a loan and property tax

Non-Current Liability

- Principal on loans for:
  - Land
  - Machinery
  - Breeding cattle
  - Barn

US Farm Liability



- 5.5% increase in real estate debt
- Real estate accounts for 65% of farm debt

Balance Sheet Analysis

- Liquidity measures:
  - current ratio,
  - working capital
- Solvency measures:
  - debt/asset ratio,
  - equity/asset ratio,
  - debt/equity ratio

Measures of Liquidity

Current Ratio

- Shows the value of the current assets relative to the current liabilities

Current ratio = total current farm assets / total current farm liabilities

- The higher it is the more liquid the business
  - CR < 1.1 is Vulnerable range
  - 1.1 < CR < 1.7 is Caution range
  - CR > 1.7 is Strong range

Measures of Liquidity

Working Capital

- Measures what is left if all current assets were sold and all current debts were paid

Total capital = total current farm assets - total current farm liabilities

- The higher the working capital level the better

Measures of Solvency

Debt to Asset Ratio (D/A)

- Measures the farm's debt load compared with the total asset value.
  - This can be cost or market values but needs to be consistent

D/A = total liabilities / total farm assets

- ***% of the farms assets are owed to creditors***

Measures of Solvency

Debt to Asset Ratio

- A high value shows the creditors have a large share of farm assets and the creditor shares a higher level of financial risk.
- The lower the better
- 40% or below is strong and 70% or above is vulnerable

Measures of Solvency

Equity to Asset ratio

- Measures how much Equity in the business relative to the total asset value

E/A = Total farm Net Worth / total farm asset

- ***% of the farms assets are owned by the owners***

Measures of Solvency

Equity to Asset Ratio

- Higher value show the farmer has a larger share of farm assets, and the creditor faces a lower financial risk
- 70% or above is strong and 40% or below is vulnerable

Measures of Solvency

Debt to Equity ratio

- Sometimes called leverage ratio

D/E = Total farm liabilities / total farm Net Worth

- ***% of all Equity is leveraged for debt***

Measures of Solvency

Debt to Equity

- The higher the D/E ratio is, the more debt is being used relative to equity.

- General rule: 43% or below is strong and 150% or above is vulnerable

Income Sheet

Income Statement

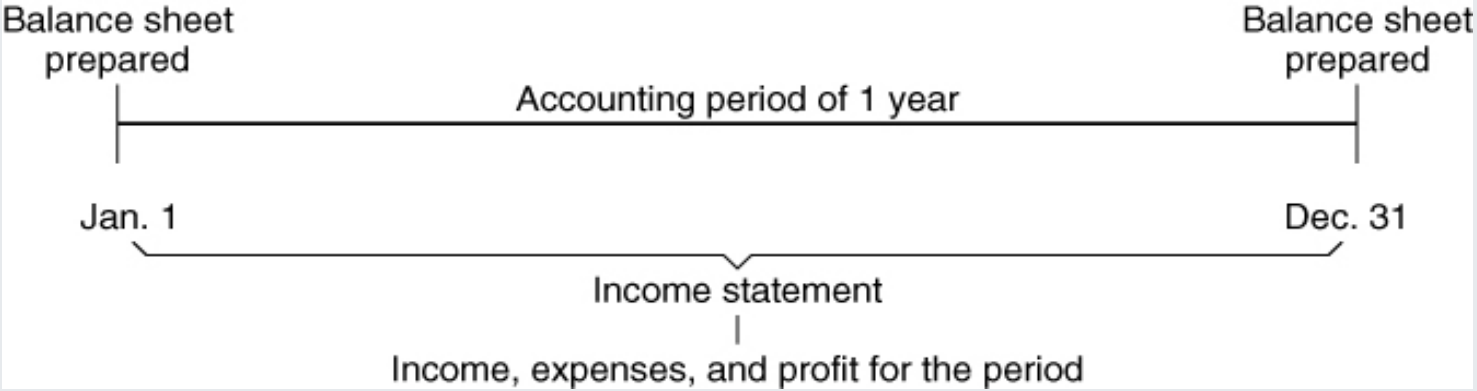
Revenue
Value of product and services produced

Expense
a cost incurred in the production of revenue

Profit!!

Income Sheet

- Shows the revenue and expenses during a certain time period (shows the profits or losses)



Name	AREC FARMS

Revenue

Cash Income

Sales of Livestock Bought for resale	
Sale of livestock, grain, etc.	
Gov't payments	
Cooperative distribution paid	
Crop Insurance	
Sale of Breeding stock	
Other cash revenue	
Total Cash Income	$ -

Expenese

Cash Expense

Truck Expense	
Chemicals	
Conservation	
Custom Hire	
Employee Benefits	
Feed Purchased	
Fertilizer and Lime	
Freight, trucking	
Fuel, oil	
Insurance	
Interest Paid	
Labor hired	
Rent or lease	
Repair and Maintenance	
Seed	
Storage	
Supplies	
Taxes	
Utilities	
Vet Fee	
Other cash expense	
Livestock Purchased	
Total Cash Expenses	$ -
Net Cash Income	$ -

Inventory Changes

	Beginning Value	Ending Value	Net Change
Market Livestock	$ -	$ -	$ -
Crops held for feed or sale	$ -	$ -	$ -
Accounts Receivable	$ -	$ -	$ -
Breeding livestock	$ -	$ -	$ -
Prepaid Expense	$ -	$ -	$ -
Investment in growing crop	$ -	$ -	$ -
Commerical feed on hand	$ -	$ -	$ -
Supplies on hand	$ -	$ -	$ -
Cash and Checking account	$ -	$ -	$ -
Accounts Payable	$ -	$ -	$ -
Accrued Interest	$ -	$ -	$ -
Total Inventory Change			$ -

Depreciation

	Beginning Value	Ending Value	Depreciation
Machinery	$ -	$ -	$ -
Buildings and Improvements	$ -	$ -	$ -
Total Depreciation			$ -

Net Farm Income From Operation	$ -
Sale of Farmland	
Cost of value of land sold	
Capital Gain and losses	0
Net Farm Icome	$ -

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Cash Revenue

- Should include all cash revenue earned during the production accounting period
  - Sale of livestock
  - Sale of grain
  - Gov’t payments
  - Distributions paid
  - Excludes the sale of land, gifts, off-farm income

Cash Revenue & Expenses

- Includes all cash expenses during the production accounting period
  - Seed, fertilizer, fuel, labor, chemicals, feed, custom hire work, insurance, utilities,

- Net Cash Income
  - Cash revenue – cash expenses

Name	AREC FARMS

Revenue	
Cash Income	
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Sale of livestock, grain, etc.	
Gov't payments	
Cooperative distribution paid	
Crop Insurance	
Sale of Breeding stock	
Other cash revenue	
Total Cash Income	$ -

Expenese	
Cash Expense	
Truck Expense	
Chemicals	
Conservation	
Custom Hire	
Employee Benefits	
Feed Purchased	
Fertilizer and Lime	
Freight, trucking	
Fuel, oil	
Insurance	
Interest Paid	
Labor hired	
Rent or lease	
Repair and Maintenance	
Seed	
Storage	
Supplies	
Taxes	
Utilities	
Vet Fee	
Other cash expense	
Livestock Purchased	
Total Cash Expenses	$ -
Net Cash Income	$ -

Inventory Changes	Beginning Value	Ending Value	Net Change
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Commerical feed on hand	$ -	$ -	$ -
Supplies on hand	$ -	$ -	$ -
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Accounts Payable	$ -	$ -	$ -
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Total Inventory Change			$ -

Depreciation	Beginning Value	Ending Value	Depreciation
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Buildings and Improvements	$ -	$ -	$ -
Total Depreciation			$ -

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Accrual income adjustments

- These are found from the beginning of the year and ending of the year balance sheet
  - These are formula adjustments from cash to accrual
- Shows changes in inventory value over the year
  - Inventory – the physical quantity and financial value of products produced for sale that have not been sold
    - Number of marketable/breed cattle

Accrual Adjustments

- Connects revenue and expense to the year it was produced

- Net farm income from operation
  - Net cash income + depreciation + total inventory changes

Incon

Name	AREC FARMS

Revenue	
Cash Income	
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Crop Insurance	
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Storage	
Supplies	
Taxes	
Utilities	
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Other cash expense	
Livestock Purchased	
Total Cash Expenses	$ -
Net Cash Income	$ -

Inventory Changes	Beginning Value	Ending Value	Net Change
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Crops held for feed or sale	$ -	$ -	$ -
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Supplies on hand	$ -	$ -	$ -
Cash and Checking account	$ -	$ -	$ -
Accounts Payable	$ -	$ -	$ -
Accrued Interest	$ -	$ -	$ -
Total Inventory Change			$ -

Depreciation	Beginning Value	Ending Value	Depreciation
Machinery	$ -	$ -	$ -
Buildings and Improvements	$ -	$ -	$ -
Total Depreciation			$ -

Net Farm Income From Operation	$ -
Sale of Farmland	
Cost of value of land sold	
Capital Gain and losses	0
Net Farm Icome	$ -

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Gain or Loss on Sale of Capital Asset

- Some years income is received from sale of assets such as land, machinery, equipment
- The sale price might more or less than the cost value therefore you had a capital gain or loss
- Net farm income
  - net farm income from operations +/- any gains or losses of capital assets

Cash vs. Accrual Income Statement

- The main difference is timing at which income and expenses are recognized and recorded
- Cash Accounting: Recognizes income when is received and recognizes expenses when cash is paid.
- Accrual accounting: Recognizes income when it is earned (creates asset of accounts receivable) and recognizes expenses when they are incurred (creates liabilities such as accounts payable)

Cash vs. Accrual Example

- You decided in Oct. 2020 to background cattle until Feb. 2021
- No cash from sales is received until 2021
- You have no livestock income in 2020
- But if you decide to sale 2021 calf crop in Oct 2021 because prices are good, you have two cash sales of cattle in 2021 with cash
- Accrual ties the 2020 calves to 2020 income..

Where do you Start?

Input Forms

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Balance Sheet Input Form

Current Assets are assets or cash that are sold/consumed within a year

Cash, Savings, and Checking
Any balances as of December 31st in any checking accounts, cash on hand, and savings accounts

Description	Value

Prepaid Expenses & supplies
Includes estimated value of feed, seed, fertilizer, semen, supplies, etc. purchased for use in the following year's production. These types of assets are usually valued at their cost.

Description	Quantity	Total Cost

Growing Crop
The cost of production already occurred for the following year's production. Includes new hay seeding and winter cover crops. Only include pasture or hay fields if newly seeded.

Crop	Expense Item	Acres	Total Cost

Intermediate Assets are assets with a use life of greater than one year but less than 10 years

Breeding Livestock
These are animals held for the purpose of producing offspring or livestock products such as meat or milk. Include adult animals, herd replacements, and sires. List these animals separately; for example you might have separate lines for cows, springing heifers, open heifers, etc.

The cost value for raised breeding livestock can be a conservative estimate of your cost of developing the animal to its current status and is fixed for the remaining years. For example, the estimated cost of raising a cow from birth to first calf is estimated to be $1,800/head, the estimated cost value of cows are $1,800/head. Another example, the cost of raising a replacement heifer is $1,300/head from birth and an additional $400/head to go from replacement to bred. Therefore, the fixed cost of replacement heifers is $1,300/head and bred heifers is $1,700.

Purchased breeding livestock should be valued at purchase cost.

Description	Number of Head	Cost Value per Head	Market Value per Head

Reminder…

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