

The BASICS of FINANCIAL STATEMENTS For Agricultural Producers

Authors:

**James McGrann
Francisco Abelló
Doug Richardson
Christy Waggoner**

Department of Agricultural Economics

Texas Cooperative Extension

Texas A&M University

May 19, 2003



The BASICS of FINANCIAL STATEMENTS

Objective

This study guide is written for farmers, ranchers, bookkeepers and business owners who want to use financial statements in their work but have little or no formal training in accounting or financial reporting. This guide leads the reader through financial statement development and shows how statements interact with each other to present a true financial picture of the business. Development of accurate financial statements is an important process for the farm or ranch manager. Financial statements are essential management tools, and also help meet the documentation requirements for a loan request. With a complete set of financial statements (balance sheet, income statement, statement of cash flows and statement of owner equity), the manager can examine the financial health of the operation.

Starting from the most basic components and structure of each of the financial statements, this section has a full set of financial statements for a farm or ranch business. This section is organized in a way that illustrates the basic components of each of the financial statements, using terminology found in the Farm Financial Standards Council's "Financial Guidelines for Agricultural Producers." The goal is for the reader to be able to learn the most basic terminology to describe financial statements, and then understand how it relates to the simplified business financial statements.

This paper is divided into five sections describing the components and structure of the four main financial statements: balance sheet, income statement, statement of cash flows and statement of owner equity. The last section briefly addresses financial statement analysis. A complete set of financial statements using farm and ranch examples demonstrates the basics presented.

The Balance Sheet

The balance sheet is a financial statement that provides information about the producer's assets, liabilities and equity and their relationships with each other at a specific point in time. The balance sheet shows the financial position of the business. The balance sheet is divided into current and non-current categories and is prepared for both the beginning and ending dates of the business fiscal year. Before illustrating the format and terminology, it is important to understand the basic accounting and balance sheet equations.

The Basic Equation of Accounting

- The basic equation of accounting states: "What you have minus what you owe is what you are worth."

$$\begin{array}{rcccl} \text{Assets} & - & \text{Liabilities} & = & \text{Equity} \\ \text{"have"} & & \text{"owe"} & & \text{"what you are worth"} \end{array}$$

- Equity, owner's equity and worth all mean the same thing, the value of the business belonging to its owners.

The Balance Sheet

- The Balance Sheet presents the basic equation of accounting in a slightly rearranged form:

$$\begin{array}{rcccl} \text{Assets} & = & \text{Liabilities} & + & \text{Equity} \\ \text{"have"} & & \text{"owe"} & & \text{"what you are worth"} \end{array}$$

- By definition: the equation must be kept in balance with the assets equation, the sum of liabilities and equity.

Balance Sheet Format

ASSETS	
Cash	A
Accounts Receivable	B
Inventory	C
Prepaid Expenses	D
Current Assets	A + B + C + D = E
Non-Current Assets At Cost	F
Accumulated Depreciation	G
Land	H
Net Non-Current Assets	(F - G) + H = I
Total Assets	E + I = J
LIABILITIES	
Accounts Payable	K
Accrued Expenses	L
Current Portion of Debt	M
Income Taxes Payable	N
Current Liabilities	K + L + M + N = O
Non-Current Liabilities	P
Land Debt	Q
Total Liabilities	O + P + Q = R
EQUITY	
Owner's Equity	J - R = S
Total Liabilities & Equity	R + S = T

The Balance Sheet: A Snapshot in Time

- The balance sheet presents the financial picture of the business the date it was prepared.
- By definition, this equation must always be “in balance” with assets equaling the sum of liabilities and owner’s equity.
- So, if you add an asset to the left side of the equation, you must also increase the right side by adding a liability or increasing owner’s equity. Two entries are required to keep the equation in balance.

- The balance sheet presents:

What the business has: assets
How much the business owes: liabilities
What the business is worth: equity

- The balance sheet reports:

Has = Owes + Worth
Assets **Liabilities** **Owner's Equity**

Assets

Balance Sheet Format

ASSETS	
Cash	A
Accounts Receivable	B
Inventory	C
Prepaid Expenses	D
Current Assets	A + B + C + D = E
Non-Current Assets At Cost	
Accumulated Depreciation	F
Land	G
Net Non-Current Assets	(F - G) + H = I
Total Assets	E + I = J

Assets

- **Assets** are everything you have: cash in the bank, inventory, machines and buildings, all of it.
- **Assets** are also certain “rights” you own that have a monetary value, like the right to collect cash from customers who owe you money.
- **Assets** are *valuable*, and this value must be *quantifiable* for an asset to be listed on the balance sheet. Everything in a business’s financial statement must be translated into dollars and cents.

Balance Sheet Format

ASSETS	
Cash ← most liquid assets	A
Accounts Receivable	B
Inventory	C
Prepaid Expenses	D
Current Assets	A + B + C + D = E
Non-Current Assets At Cost	F
Accumulated Depreciation	G
Land ← <i>Least liquid asset</i>	H
Net Non-Current Assets	(F - G) + H = I
Total Assets	E + I = J

Grouping Assets for Presentation

- **Assets** are grouped for presentation on the balance sheet according to their characteristics:

Very Liquid Assets — Cash and Securities

Assets for Sale — Inventory of Grain, Hay, Feeder Cattle

Productive Assets — Machinery and Buildings

- **Assets** are displayed in the asset section of the balance sheet in the *descending order of liquidity (the ease of convertibility into cash)*. Cash itself is the most liquid of all assets; non-current assets are normally the least liquid. Potential loss in value is greater in selling non-current assets as opposed to current assets at the time of sale.
- **Accounts receivable** are accounts that refer to what is owed to the farm operator from the sale of farm products or services.

Current Assets

Balance Sheet Format

<i>ASSETS</i>	
Cash	A
Accounts Receivable	B
Inventory	C
Prepaid Expenses	D
<hr/>	
Current Assets	A + B + C + D = E
Non-Current Assets At Cost	F
Accumulated Depreciation	G
Land	H
<hr/>	
Net Non-Current Assets	(F - G) + H = I
<hr/>	
Total Assets	E + I = J

- By definition, **current assets** are cash or those assets that are expected to be converted into cash in less than 12 months.
- **Current assets** groupings are listed in order of liquidity with the easiest to convert into cash listed first:
 1. Cash
 2. Accounts Receivable
 3. Inventory for sale: feeder cattle, etc.
- The money the business will use to pay its bills in the short-run (within the year) will come when its current assets are converted into cash (that is, inventory is sold and accounts receivable are paid by the customer or current earnings are used).

Cash

- **Cash** is the ultimate liquid asset: deposits in a bank, as well as the dollars and cents in the petty cash drawer.
- When you write a check to pay a bill, you are taking money out of the **cash** assets.

Accounts Receivable

- **Accounts receivable** is an amount owed by a customer or others to the business usually arising from the sale of products or services or other contractual obligations. **Accounts receivable** is a key factor in analyzing a business's **liquidity** (the ability to meet current liabilities without additional revenue).
- These collection rights are totaled and reported on the balance sheet as **accounts receivable**.

Inventory

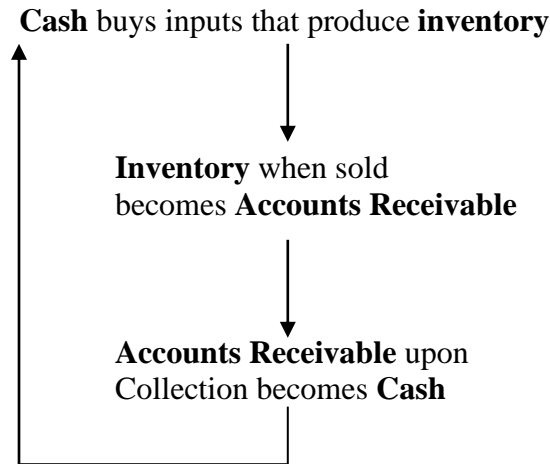
- **Inventory** are *current assets* that are held for sale in the ordinary course of business, or are in the process of production for sale, or are to be directly used or consumed in the production of products or services for sale. Examples of farm and ranch inventory includes:
 - Livestock for sale (culls, etc., ready for sale)
 - Crops for sale
 - Raised feed for sale
 - Raised or purchased feed including crops, hay, silage, and other feed sources intended to be used in livestock production.
- As inventory is sold, it becomes an **accounts receivable** and then cash when the customer pays.

Prepaid Expenses

- **Prepaid expenses** are bills the business has already paid, but for services not yet received.
- **Prepaid expenses** are things like prepaid insurance premiums or fertilizer that was purchased for application at a later date.
- **Prepaid expenses** are current assets not because they can be turned into cash, but because the business will not have to use cash to pay them in the near future. They have been paid already. At the close of the fiscal year, the amount of the prepaid consumed is treated as an expense and reflected on the income statement.

Current Asset Cycle

- **Current assets** are said to be “working assets” because they are in a constant cycle of being converted into cash. The repeating **current asset cycle** of a business is shown below:



Non-Current Assets

- In addition to a business’s current assets, there is another major asset group listed on the balance sheet called **non-current assets**. These assets are not converted into cash during the normal course of business.
- Buildings, vehicles, machinery, equipment and land are generally the largest and most important **non-current asset** grouping.

Balance Sheet Format

ASSETS	
Cash	A
Accounts Receivable	B
Inventory	C
Prepaid Expenses	D
<hr/>	
Current Assets	$A + B + C + D = E$
Non-Current Assets At Cost	F
Accumulated Depreciation	G
Land	H
<hr/>	
Net Non-Current Assets	$(F - G) + H = I$
<hr/>	
Total Assets	$E + I = J$

- **Non-current assets** are productive assets not intended for sale. They will be used over and over again to produce the product.
- **Non-current assets** commonly include breeding stock, trucks, automobiles, furniture, equipment, machinery, buildings, land, etc.
- **Non-current assets** are normally reported on the balance sheet as **net non-current assets**, valued at original cost minus accumulated depreciation. Land is a major asset that is not depreciated.

Balance Sheet Format

<i>ASSETS</i>	
Cash	A
Accounts Receivable	B
Inventory	C
Prepaid Expenses	D
<hr/>	
Current Assets	$A + B + C + D = E$
Non-Current Assets At Cost	F
Accumulated Depreciation	G
Land	H
<hr/>	
Net Non-Current Assets	$(F - G) + H = I$
<hr/>	
Total Assets	$E + I = J$

Depreciation

- **Depreciation** is an accounting convention (on the income statement) showing the current year's decline in useful value of a non-current asset due to wear and tear from use and the passage of time.
- **Depreciation** of an asset means spreading the cost to acquire the asset over the asset's whole useful life. **Accumulated depreciation** (on the balance sheet) is the sum of all the depreciation charges taken since the asset was first acquired.
- **Depreciation** charges taken in a period decrease *profits* for the period, but do not decrease *cash*. Cash was required to purchase the fixed asset originally.

Net Non-Current Assets

Balance Sheet Format

<i>ASSETS</i>	
Cash	A
Accounts Receivable	B
Inventory	C
Prepaid Expenses	D
<hr/>	
Current Assets	$A + B + C + D = E$
Non-Current Assets At Cost	F
Accumulated Depreciation	G
Land	H
<hr/>	
Net Non-Current Assets	$(F - G) + H = I$
<hr/>	
Total Assets	$E + I = J$

- The **net non-current assets** of a business are the sum of its non-current assets' purchase prices ("non-current assets @ cost") minus the depreciation charges taken on the Income Statement over the years ("accumulated depreciation").
- The so-called *book value* of an asset, its value as reported on the **balance sheet**, is the asset's purchase price minus its accumulated depreciation.
- Note that depreciation does not necessarily relate to an actual rate of decrease in value. This is true when the depreciation method used and assumed salvage value overstates depreciation. However, such appreciated assets are *by convention* still reported on the balance sheet at historical cost minus depreciation.

Liabilities

Balance Sheet Format

<i>LIABILITIES</i>	
Accounts Payable	K
Accrued Expense	L
Current Portion of Debt	M
Income Taxes Payable	N
<hr/>	
Current Liabilities	$K + L + M + N = O$
Non-Current Liabilities	P
Land Debt	Q
<hr/>	
Total Liabilities	$O + P + Q = R$
<hr/>	
<i>EQUITY</i>	
Owner's Equity	$J - R = S$
<hr/>	
Total Liabilities & Equity	$R + S = T$

- **Liabilities** are financial obligations of the business, such as money owed to lenders, suppliers, employees, etc.
- **Liabilities** are categorized and grouped for presentation on the balance sheet by:
 - to whom the debt is owed
 - whether the debt is payable within the year (current liability) or is a long-term obligation.
- Owner's equity is a very special kind of **liability**. It represents the value of the business that belongs to its owners. However, this "debt" will never be repaid in the normal course of business.

Current Liabilities

Balance Sheet Format

<i>LIABILITIES & Notes</i>	
Accounts Payable	K
Accrued Expense	L
Current Portion of Debt	M
Income Taxes Payable	N
<hr/>	
Current Liabilities	K + L + M + N = O
Non-Current Liabilities	P
Land Debt	Q
<hr/>	
Total Liabilities	O + P + Q = R
<i>EQUITY</i>	
<hr/>	
Owner's Equity	J - R = S
<hr/>	
Total Liabilities & Equity	R + S = T

- **Current Liabilities** are bills that must be paid within *one year* of the date of the balance sheet. **Current liabilities** are a reverse of current assets:

Current Assets — provide cash within 12 months
Current Liabilities — take cash within 12 months

- The cash generated from current assets is used to pay **current liabilities** as they become due.
- **Current liabilities** are grouped depending on to whom the debt is owed:
 - *accounts payable* owed to suppliers,
 - *accrued expenses* owed to employees and others for services,
 - *current debt* owed to lenders,
 - *taxes* owed to the government.

Accounts Payable

- **Accounts payable** include the amounts owed to creditors for products or services provided, but not yet paid for as of the date of the balance sheet.
- When a business receives a product or service, it can either pay for it immediately with cash or wait and let what is owed become an account payable.

- **Accounts payable** is used for debts to regular suppliers of products or services bought on credit.

Accrued Expenses

- **Accrued expenses** are monetary obligations similar to accounts payable. The business uses one or the other classifications, depending on to whom the debt is owed.
- Examples of **Accrued expenses** are salaries earned by employees that have not yet been paid to them, lawyers' bills not yet paid, interests due but not yet paid on bank debt, and so forth.

Current Portion of Debt

- Any **notes payable** and the *current portion of long-term debt* are both components of current liabilities and are listed on the Balance Sheet under **current portion of debt**.
- If the business owes money to a bank and the terms of the loan say it must be repaid in less than 12 months, then the debt is called a **note payable** and is a current liability.

Income Taxes Payable

- Every time the business sells something and makes a profit on the sale, a percentage of the profit will be owed to the government as *income taxes*.
- **Income taxes payable** is income taxes that the business owes the government, but that the business has not yet paid.
- Every three months or so, the business will send the government a check for the income taxes owed. For the time between when the profit was made and the time that the taxes are actually paid, the business will show the amount to be paid as **income taxes payable** on the balance sheet.

Working Capital

- The business's **working capital** is the amount of money left over after you subtract current liabilities from current assets.

Current Assets	–	Current Liabilities	=	Working Capital
Cash		Accounts Payable		
Accounts Receivable		Accrued Expenses		
Inventory		Current Debt		
Prepaid Expenses		Taxes Payable		

- **Working capital** is the amount of money the business has to “work with” in the *short-term*. **Working capital** feeds the operations of the business with dollar bills. **Working capital** is also called “net current assets,” or simply “funds.”

Sources and Uses of Working Capital

- **Sources** of working capital *increase* in the normal course of business when:
 - Current liabilities decrease, and/or
 - Current assets increase
- **Uses** of working capital *decrease* in the normal course of business when:
 - Current assets decrease and/or
 - Current liabilities increase
- The greater the amount of working capital means that short-term obligations can be met without acquiring additional operating loans (current liabilities). Often, this is explained in terms of the ability to meet “cash flow” obligations.

Non-Current Liabilities

Balance Sheet Format

LIABILITIES	
Accounts Payable	K
Accrued Expense	L
Current Portion of Debt	M
Income Taxes Payable	N
<hr/>	
Current Liabilities	$K + L + M + N = O$
Non-Current Liabilities	P
Land Debt	Q
<hr/>	
Total Liabilities	$O + P + Q = R$
EQUITY	
<hr/>	
Owner's Equity	$J - R = S$
<hr/>	
Total Liabilities & Equity	$R + S = T$

- A loan with an overall term of more than 12 months from the date of the balance sheet is called a **non-current liability**. A mortgage on a building is a common example.
- The so-called *current portion of long-term debt* is the amount due for payment within 12 months and is a current liability listed under **current portion of debt**.

Total Liabilities

Balance Sheet Format

<i>LIABILITIES</i>	
Accounts Payable	K
Accrued Expense	L
Current Portion of Debt	M
Income Taxes Payable	N
<hr/>	
Current Liabilities	$K + L + M + N = O$
Non-Current Liabilities	P
Land Debt	Q
<hr/>	
Total Liabilities	$O + P + Q = R$
<i>EQUITY</i>	
<hr/>	
Owner's Equity	$J - R = S$
<hr/>	
Total Liabilities & Equity	$R + S = T$

- A business's **total liabilities** are just the sum of its *current liabilities* and *non-current liabilities*.

Owner's Equity

Balance Sheet Format

<i>LIABILITIES</i>	
Accounts Payable	K
Accrued Expense	L
Current Portion of Debt	M
Income Taxes Payable	N
<hr/>	
Current Liabilities	$K + L + M + N = O$
Non-Current Liabilities	P
Land Debt	Q
<hr/>	
Total Liabilities	$O + P + Q = R$
<hr/>	
<i>EQUITY</i>	
<hr/>	
Owner's Equity	$J - R = S$
<hr/>	
Total Liabilities & Equity	$R + S = T$

- If you subtract what the business owes (total liabilities) from what it has (total assets) you are left with what the value of company is to its owners, its **owner's equity**.
- **Owner's equity** represents the portion of the owner's value in the business. Owner's equity is used to monitor the financial position and progress (growth) of the business.
- The value of **owner's equity** increases when the business *makes a profit*, thereby increasing retained earnings, or when the value of *assets increase* more than *liabilities*.
- The value of **owner's equity** decreases when the business has *a loss*, thereby lowering retained earnings, or when the value of *assets decrease* more than *liabilities*.
- **Retained Earnings** is discussed in more detail on page 34.

Balance Sheet Summary

Balance Sheet Format

ASSETS	
Cash	A
Accounts Receivable	B
Inventory	C
Prepaid Expenses	D
Current Assets	A + B + C + D = E
Non-Current assets At Cost	F
Accumulated Depreciation	G
Land	H
Net Non-Current Assets	(F - G) + H = I
Total Assets	E + I = J
LIABILITIES	
Accounts Payable	K
Accrued Expenses	L
Current Portion of Debt	M
Income Taxes Payable	N
Current Liabilities	K + L + M + N = O
Non-Current Liabilities	P
Land Debt	Q
Total Liabilities	O + P + Q = R
EQUITY	
Owner's Equity	J - R = S
Total Liabilities & Equity	R + S = T

- The balance sheet presents the financial picture of the business on one particular day, an instant in time.

$$\begin{array}{ccccc} \text{Assets} & = & \text{Liabilities} & + & \text{Owner's Equity} \\ \text{"have today"} & & \text{"owe today"} & & \text{"worth today"} \end{array}$$

- As noted before by definition, this equation must always be in balance with assets equal to the sum of liabilities and equity.
- The **balance sheet** along with the **income statement** form the two major financial statements of the business. The balance sheet shows the financial position of the business. The income statement, as will now be illustrated, shows the profitability of the business or how equity is increased (or decreased) during the fiscal year.

Income Statement

The accrual adjusted income statement is a summary of income and expenses for the fiscal year normally matching the tax year. It includes both cash and non-cash values, is calculated after taxes and can also be called a profit and loss statement or the statement of earnings and comprehensive income.

An income statement is used to measure net income or profit for the business in a given fiscal year. It enables the farm operator to identify the sources of income, whether it is livestock, crops, or non-farm. The farm operator will also be able to determine what his greatest expenses are and how the net income figure has been influenced by the sale of capital assets.

The income statement is divided into revenues and expenses. Revenues are derived from the normal operations of the business. Such items might include the sale of crops, feed, livestock and livestock products. Government payments would also be included when appropriate.

Income Statement Format

<i>GROSS REVENUE</i>	
Cash Receipts	A
Non-Cash Transfers-Out	B
Inventory & Accounts Receivable Change	C
<hr/>	
Gross Revenue	A + B + C = D
<i>EXPENSES</i>	
Inventory Change (Expenses)	E
Repairs & Maintenance	F
Labor	G
Feed	H
Depreciation	I
<hr/>	
Total Operating Expense	E + F + G + H + I = J
<hr/>	
Interest Expense	K
<hr/>	
Net Income from Operations	D - (J + K) = L
<hr/>	
Capital Gains (Losses)	M
Taxes	N
<hr/>	
<i>NET INCOME</i>	L + M - N = O

- The **income statement** gives one important perspective on the health of a business, its profitability.
- The **income statement** does not tell the whole picture about a company's financial health.

The **balance sheet** reports on *assets, liabilities, and equity*.

The **statement of cash flows** reports on *cash movements*.

- The **income statement** says nothing about when the company receives cash or how much cash it has on hand.
- The **income statement** reports on marketing and selling activities of a business over a period of time:

What is **sold** in the period
Minus
 What it **cost** to make
Minus
 Selling and general **expenses** for the period
Equals
Income for the period

- The **income statement** documents, for a specific period (a month, quarter, or year), the **second basic equation of accounting**:

$$\text{Sales} - \text{Costs \& Expenses} = \text{Income}$$

Gross Revenue

Income Statement

<i>GROSS REVENUE</i>	
Cash Receipts	A
Non-Cash Transfers-Out	B
Inventory & Accounts Receivable Change	C
<hr/>	
Gross Revenue	A + B + C = D
<i>EXPENSES</i>	
Inventory Change (Expenses)	E
Repairs & Maintenance	F
Labor	G
Feed	H
Depreciation	I
<hr/>	
Total Operating Expense	E + F + G + H + I = J
<hr/>	
Interest Expense	K
<hr/>	
Net Income from Operations	D - (J + K) = L
<hr/>	
Capital Gains (Losses)	M
Taxes	N
<hr/>	
<i>NET INCOME</i>	L + M - N = O

Cash Receipts

- **Cash** received during the operating cycle from the cash sale of products or services.
- Only products *sold (cash receipt)* are considered a cash receipt.

Non-Cash Transfers (Out)

- Businesses with multiple activities or entities (e.g., cow-calf, stocker, etc.) may transfer livestock from one ranch (or entity) to another.
- This transfer from one business to another represents a source of income for the entity the product came from, even though no cash changed hands.

Inventory & Accounts Receivable Change - Revenue

- Inventory Change is the increase or decrease in revenue calculated from the beginning and ending balance sheet values of certain products held for sale. Example: livestock held for sale.
- Accounts Receivable Change is the difference (increase or decrease) in the beginning and ending revenue owed to the business for products or services sold but not received.
- In order to accurately match revenues with expenses, changes must be reflected in inventory value and accounts receivable. The change in inventory and receivables creates the necessity for an accrual adjustment.
- If a certain product is not ready for sale, its value is recorded as an inventory.

Expenses

Income Statement

<i>GROSS REVENUE</i>	
Cash Receipts	A
Non-Cash Transfers-Out	B
Inventory & Accounts Receivable Change	C
<hr/>	
Gross Revenue	$A + B + C = D$
<hr/>	
<i>EXPENSES</i>	
Inventory Change (Expenses)	E
Repairs & Maintenance	F
Labor	G
Feed	H
Depreciation	I
<hr/>	
Total Operating Expense	$E + F + G + H + I = J$
<hr/>	
Interest Expense	K
<hr/>	
Net Income from Operations	$D - (J + K) = L$
<hr/>	
Capital Gains (Losses)	M
Taxes	N
<hr/>	
<i>NET INCOME</i>	$L + M - N = O$

Inventory Change (Expenses)

- Includes inventory on *supplies, prepaid expenses, leases, raised and purchased stored feed and investments in growing crops and livestock.*
- Is the difference between *beginning* and *ending* values of inventory taken from the **balance sheet**.
- Is generally considered an expense as these certain assets in inventory are used during an operating year.

Other Operating Expenses

- Repairs & Maintenance
- Labor
- Feed
- Depreciation, see the “Balance Sheet” section

Interest Expense

- **Interest expense** is a type of cash expense that requires payments of interest on short and long-term borrowings throughout an operating year.

Net Income from Operations

- Is calculated by taking the difference of operating expenses from gross revenues.

$$\text{Net Income from Operations} = \text{Gross Revenues} - \text{Operating Expenses} - \text{Interest}$$

- Represents **net income** after interest and before capital gains (losses) and taxes.

Capital Gains (Losses)

- Capital gains and losses are those resulting from the **sale** or **disposal** of intermediate and long-term capital assets.
- The amount of gain or loss is determined by the difference between the sale price and the “book value” (purchase cost – accumulated depreciation).

Taxes (Property, Income, and Self-Employment)

- Income taxes are expenses that the operator must pay on the net revenue generated by the business, which includes income and self-employment taxes.

Net Income

- Income derived from the business as a whole.
- Includes net income from operations plus total capital gain (loss) minus interest and taxes.

Statement of Cash Flows

The statement of cash flows is a financial statement that shows the cash inflows, cash outflows, and net change in cash from the operating, investing and financing activities of a farm in a manner that reconciles the beginning and ending cash balances.

The statement of cash flows is necessary to provide information about a farm's liquidity, financial flexibility and operating capability. The liquidity of a farm indicates its ability to meet its obligations as they come due. Financial flexibility refers to a farm's ability to take effective actions to change the amounts and timings of its cash flows in order to adapt to unexpected needs and opportunities. Operating capability refers to the ability of a business to maintain a given physical level of operations. For example, a business not sustaining machinery and equipment (living on depreciation) is losing operating capability.

The statement of cash flows is divided into three sections: cash from operations (includes cash receipts from the sale of farm products and cash expenses from operating activities), cash from investing (includes cash receipts from the sale of securities or capital assets), and cash from financing (includes cash receipts from any increase in short- or long-term borrowing or paid-in capital from outside sources). Cash outflows from financing activities include payments of debt and capital lease obligations.

Statement of Cash Flows Format

<i>CASH FROM OPERATIONS</i>	
Receipts	A
Expenses	B
Interest Expense	C
Taxes	D
<hr/>	
Net Cash From Operations	$A - B - C - D = E$
<i>CASH FROM INVESTING</i>	
Sales	F
Purchases	G
<hr/>	
Net Cash From Investing	$F - G = H$
<i>CASH FROM FINANCING</i>	
New Borrowings	I
Debt Payments (Principal Payments)	J
<hr/>	
Net Cash From Financing	$I - J = K$
<hr/>	
Cash Withdrawals	L
Cash Contributions	M
<hr/>	
<i>NET CASH FLOW</i>	$E + H + K - L + M = N$

- The **statement of cash flows** tracks the movement of cash through the business over a *period of time*.
- A business's **statement of cash flows** is just like a check register, recording all the business's transactions that use cash (*checks*) or supply cash (*deposits*).
- The **Statement of Cash Flows** shows

Cash on hand at the start of a period
Plus
Cash received in the period
Minus
Cash spent in the period
Equals
Cash on hand at the end of the period.

Cash Transactions

- So-called **cash transactions** affect cash flow. For example:

Paying salaries decreases **cash**.
Paying for equipment decreases **cash**.
Paying off a loan decreases **cash**.

Receiving money borrowed from a bank raises **cash**.
Receiving money from investors from stock raises **cash**.
Receiving money from customers raises **cash**.

- Notice the use of the words “paying” and “receiving money” in those transactions where cash actually changes hands.

Non-Cash Transactions

- So-called **non-cash transactions** are business activities where no cash moves into or out of the business's accounts. **Non-cash transactions** have no effect on the statement of cash flows, but they can affect the income statement and balance sheet.
- Examples of **non-cash transactions** include: bartering, shipping product to a customer, receiving supplies from a vendor, and receiving raw materials required to make the product.

- Note: Cash comes into the business when the customer pays for the product, not when the business ships it. Cash moves out of the business when it pays for materials, not when the business orders or receives them.

Cash Flow

- A **positive** cash flow for a period means that the business *has more cash at the end of the period than at the beginning*.
- A **negative** cash flow for a period means that the business *has less cash at the end of the period than at the beginning*.
- If a business has a continuing negative **cash flow**, it runs the risk of running out of cash and being unable to pay its bills when due.

Sources and Uses of Cash

- **Cash** comes into the business (*sources of cash inflows*) in three major ways:
 - Operating activities* such as receiving payments from customers.
 - Investing activities* such as sales of breeding stock.
 - Financing activities* such as borrowing money.
- **Cash** goes out of the business (*sources of cash outflows*) in four major ways:
 - Operating activities* such as paying suppliers and employees.
 - Financial activities* such as paying interest and principal on debt.
 - Investing activities* such as making major capital investments in long-lived productive assets like breeding stock or farm machinery.
 - Paying income taxes* to the government.

Cash from Operations

Statement of Cash Flows Format

<i>CASH FROM OPERATIONS</i>	
Receipts	A
Expenses	B
Interest Expense	C
Taxes	D
<hr/>	
Net Cash From Operations	$A - (B + C + D) = E$
<i>CASH FROM INVESTING</i>	
Sales	F
Purchases	G
<hr/>	
Net Cash From Investing	$F - G = H$
<i>CASH FROM FINANCING</i>	
New Borrowing	I
Debt Payments (Principal Payments)	J
<hr/>	
Net Cash From Financing	$I - J = K$
<hr/>	
Cash Withdrawals	L
Cash Contributions	M
<i>NET CASH FLOW</i>	$E + H + K - L + M = N$

- The normal day-to-day business activities (making and selling products) of a business are called its “*operations.*”
- The statement of cash flows shows **cash from operations** separately from other cash flows.
- The cash receipts, cash expenses, cash interest expenses and cash tax expenses are brought down from the income statement.
- **Net cash provided by operating activities** is calculated by subtracting the cash expenses from the cash revenue.

Cash Receipts

- **Cash receipts** (also called *collections* or simply *receipts*) come from collecting money from customers.
- **Cash receipts** increase the amount of cash the business has on hand.

- Note: Receiving cash from customers decreases the amount that is due the business as accounts receivable shown on the balance sheet.
- **Cash receipts** are not profits. Profits are something else altogether, so do not confuse the two. Profits are reported on the income statement.

Cash Expenses

- A **cash expense** is writing a check to pay for feed, supplies or for worker's salary and associated payroll expenses. **Cash expenses** *decrease* the amount of cash the business has on hand. Note: **Cash expenses** (payments) to suppliers decrease the amount the business owes as reported in accounts payable on the balance sheet.
- **Cash expenses** are also called payments or disbursements.

Interest Expense

- A type of **cash expense** that requires payments of interest on short-term and long-term borrowings throughout an operating year.

Taxes (Property, Income, and Self-Employment)

- Cash income tax expense required from operating activities.
- Owing **taxes** is different from paying them. The business owes more tax every time it sells something for a profit.
- Just owing **taxes** does not reduce cash; *only writing a check to the government and thus paying the taxes due actually reduces the business's cash on hand.*
- Paying taxes to the government decreases the business's supply of cash.

Net Cash From Operations

- **Net cash from operations** is calculated by subtracting the *cash expenses, interest expenses, and taxes from the cash receipts.*

Cash from Investing

Statement of Cash Flows Format

<i>CASH FROM OPERATIONS</i>	
Receipts	A
Expenses	B
Interest Expense	C
Taxes	D
<hr/>	
Net Cash From Operations	$A - (B + C + D) = E$
<i>CASH FROM INVESTING</i>	
Sales	F
Purchases	G
<hr/>	
Net Cash From Investing	$F - G = H$
<i>CASH FROM FINANCING</i>	
New Borrowing	I
Debt Payments (Principal Payments)	J
<hr/>	
Net Cash From Financing	$I - J = K$
<hr/>	
Cash Withdrawals	L
Cash Contributions	M
<i>NET CASH FLOW</i>	$E + H + K - L + M = N$

- **Investing activities** include acquiring and selling investments such as breeding stock, vehicles, machinery and equipment and land.

Sales

- The total cash from sales are all cash inflows generated from the sale of these assets. The total cash purchases are all cash outflows used in acquiring these assets.

Purchases

- Paying for such assets as breeding stock, vehicles, machinery and equipment and land is not considered part of operations and thus is not reported in cash expenses from operations. Cash payments for these assets are reported as investments in productive assets; therefore, they would be placed under **investing activities**. Note: When the enterprise depreciates a capital asset, it does not use any cash at that time. No check is written to anyone.

Net Cash From Investing

- **Net cash from investing** is calculated by subtracting purchases from sales in investing activities.

Cash from Financing

Statement of Cash Flows Format

<i>CASH FROM OPERATIONS</i>	
Receipts	A
Expenses	B
Interest Expense	C
Taxes	D
<hr/>	
Net Cash From Operations	$A - (B + C + D) = E$
<i>CASH FROM INVESTING</i>	
Sales	F
Purchases	G
<hr/>	
Net Cash From Investing	$F - G = H$
<i>CASH FROM FINANCING</i>	
New Borrowing	I
Debt Payments (Principal Payments)	J
<hr/>	
Net Cash From Financing	$I - J = K$
<hr/>	
Cash Withdrawals	L
Cash Contributions	M
<i>NET CASH FLOW</i>	$E + H + K - L + M = N$

- **Financing activities** include acquiring and paying off debt.

New Borrowings

- Borrowing money increases the amount of cash the business has on hand.
- Cash inflows are generated by the acquisition of **new borrowings** (debt).

Debt Payments (Principal Payments)

- Paying back a loan decreases the business's supply of cash on hand.
- Cash outflows are from the **debt payments**.

Net Cash From Financing

- The difference between any new borrowings in a period and the amount paid back in the period is called **net cash from financing**.
- Total new borrowings minus total debt payment.

Cash Withdrawals

- **Cash withdrawals**, which can be referred to as *family living withdrawals* for a farm or ranch operation, are paid by the operation to the family. The amount assigned to family living withdrawals should be equivalent to the salary required to hire a non-family member to provide an equivalent service. Withdrawals in excess of this amount are distributions of capital.

Cash Contributions (Distributions)

- Cash outflows (distributions) or inflows (contributions) from gifts or inheritances. Can also be cash outflows or inflows from other businesses.

Net Cash Flow

- **Net cash flow** is the **sum** of net cash provided by operating activities **plus** net cash provided by investing activities **plus** net cash provided by financing activities **minus** cash family living withdrawals **plus** cash received **minus** cash distributed.

Statement of Owner's Equity

The statement of owner's equity reconciles the beginning and ending owner's equity through determining the change in retained earnings, the change in contributed capital and the change in distributed capital.

Changes in equity can come from three sources: changes in contributions or withdrawals of capital by the owner, or operating income or losses. A change in equity can occur when the owner either contributes more capital or removes capital from the business. Another way for equity to change is through allowing some of the profits to stay in the business as retained earnings.

Statement of Owner's Equity Format

<i>RETAINED EARNINGS</i>	
Net Income	A
Withdrawals	B
<hr/>	
Net Change in Retained Earnings	$A - B = C$
<i>CAPITAL CONTRIBUTIONS</i>	
Cash & Investments	D
Buildings, Machinery, & Equipment	E
Land	F
<hr/>	
Total	$D + E + F = G$
<i>CAPITAL DISTRIBUTIONS</i>	
Cash & Investments	H
Buildings, Machinery, & Equipment	I
Land	J
<hr/>	
Total	$H + I + J = K$
<hr/>	
Net Change in Capital	$G - K = L$
<i>OWNER EQUITY RECONCILIATION</i>	
Beginning Owner Equity	M (from balance sheet)
Total Equity Changes	$C \pm L = N$
Ending Owner Equity	$M \pm N = O$

- Basic definition of **owner's equity**: **owner's equity** is *capital contributions, distributions, and retained earnings* less the *liabilities* of the business.
- The **statement of owner's equity** reconciles the beginning and ending owner's equity through determining the changes in retained earning, the change in contributed capital, and the change in distributed capital.

Retained Earnings

Statement of Owner's Equity Format

<i>RETAINED EARNINGS</i>	
Net Income	A
Withdrawals	B
<hr/>	
Net Change in Retained Earnings	$A - B = C$
<i>CAPITAL CONTRIBUTIONS</i>	
Cash & Investments	D
Buildings, Machinery, & Equipment	E
Land	F
<hr/>	
Total	$D + E + F = G$
<i>CAPITAL DISTRIBUTIONS</i>	
Cash & Investments	H
Buildings, Machinery, & Equipment	I
Land	J
<hr/>	
Total	$H + I + J = K$
<hr/>	
Net Change	$G - K = L$
<i>OWNER EQUITY RECONCILIATION</i>	
Beginning Owner Equity	M
Total Equity Changes	$C \pm L = N$
Ending Owner Equity	$M \pm N = O$

- **Retained earnings**, after tax, are net profits kept to accumulate in a business after withdrawals are made.
- All of the business profits that have not been returned to the owners through capital withdrawals or capital distributions or dividends are called **retained earnings**.

Retained Earnings = Sum of All Profits – Sum of All Dividends or Withdrawals

- **Retained Earnings** can be viewed as a “pool” of money from which capital withdrawals or future dividends could be paid.

Net Income

- **Net income** is the “bottom line.” This is the value a producer and lender is most interested in. Net income is the amount that is available for principal debt repayment and growth of the business after all things are considered.
- **Net income** is the income after combining all revenues and expenses.
- **Net income** is transferred from the income statement into retained earnings.

Withdrawals

- **Withdrawals** refer to cash family living withdrawals and unaccounted withdrawals that are transferred from the **statement of cash flows**.

Net Change in Retained Earnings

- The **total change in equity due to retained earnings** is calculated by **subtracting** cash withdrawals from net income.

Capital Contributions/Distributions

Statement of Owner's Equity Format

<i>RETAINED EARNINGS</i>	
Net Income	A
Withdrawals	B
<hr/>	
Net Change in Retained Earnings	$A - B = C$
<i>CAPITAL CONTRIBUTIONS</i>	
Cash & Investments	D
Buildings, Machinery, & Equipment	E
Land	F
<hr/>	
Total	$D + E + F = G$
<i>CAPITAL DISTRIBUTIONS</i>	
Cash & Investments	H
Buildings, Machinery, & Equipment	I
Land	J
<hr/>	
Total	$H + I + J = K$
<hr/>	
Net Change	$G - K = L$
<i>OWNER EQUITY RECONCILIATION</i>	
Beginning Owner Equity	M
Total Equity Changes	$C \pm L = N$
Ending Owner Equity	$M \pm N = O$

Capital Contributions

- **Capital contributions** are such things as cash and investments, buildings, machinery and equipment and land that arise from the transfer of capital to the business, gifts and inheritances received during the operating cycle.

Capital Distributions

- **Capital distributions** are such things as cash and investments, buildings, machinery and equipment and land that are **given** away during the operating cycle.

Net Change in Capital

- **Net change in capital** is calculated by **subtracting** total capital distributions from total capital contributions.

Owner Equity Reconciliation

Statement of Owner's Equity Format

<i>RETAINED EARNINGS</i>	
Net Income	A
Withdrawals	B
<hr/>	
Net Change in Retained Earnings	$A - B = C$
<i>CAPITAL CONTRIBUTIONS</i>	
Cash & Investments	D
Buildings, Machinery, & Equipment	E
Land	F
<hr/>	
Total	$D + E + F = G$
<i>CAPITAL DISTRIBUTIONS</i>	
Cash & Investments	H
Buildings, Machinery, & Equipment	I
Land	J
<hr/>	
Total	$H + I + J = K$
<hr/>	
Net Change	$G - K = L$
<i>OWNER EQUITY RECONCILIATION</i>	
Beginning Owner Equity	M
Total Equity Changes	$C \pm L = N$
Ending Owner Equity	$M \pm N = O$

- Used to determine if the financial statements are in order.

Beginning Owner Equity

- **Beginning owner equity** is taken from the **beginning balance sheet**; it adds changes due to retained earnings, contributed capital and distributed capital to determine ending owner's equity.

Total Equity Change

- To determine **total equity change**, the changes due to retained earnings, contributed capital, and distributed capital are added or subtracted.

Ending Owner Equity

- The **ending owner equity** takes beginning owner equity and **adds** total equity change.
- This calculated **ending owner's equity** could be compared to the owner's equity calculated from the ending balance sheet. *If these two numbers are not the same, there is a problem with the integrity of the financial statements.*

Financial Ratios Basics

Financial Statement Analysis helps identify the business's financial position and performance to assess strengths and weaknesses and develops strategies for the future. For introduction a few of the key analysis ratios are identified as well as their calculation and interpretation.

Financial statement analysis begins with accurate financial data presented in a standardized format, which is understood by the analyst. Knowledge of the business organization and goals of the owners are also valuable in understanding and completing the diagnostic interpretation of the statements. When historical, current, and projected financial statements are completed and key ratios calculated, the business financial position and performance can be interpreted.

The criteria and measures used to analyze these statements follow the guidelines developed by the National Farm Financial Standards Council (FFSC) includes profitability, liquidity, solvency, and financial offering. A brief description of five of the sixteen FFSC financial ratios used to evaluate a business 's performance is presented (see references for more complete information).

Profitability

Profitability is the ability of the business to generate income in excess of expenses. It is expressed as the net returns to capital used in production. Two measures of profitability are: Return on Assets (ROA) and Return on Equity (ROE).

Return on Assets (ROA)

- The net income generated by all assets, after labor has been compensated, but before interest payments, divided by total assets.

$$\frac{\text{Net Income from Operations} + \text{Interest expense}}{\text{Average Total Assets}}$$

- An index measurement of profitability that indicates the profitability per dollar of assets, thus allowing comparisons over different size firms and different types of businesses/investment.
- As the rate of return on assets rises, the more profitable the operation.
- The data used to calculate Return on Assets (ROA) can be found on the Balance Sheet (Total Assets) and Income Statement (Net Income from Operations, Interest Expense).

Return on Equity (ROE)

- The net income after all labor and interest charge is the residual return to the owner's investment divided by the equity investment.

$$\frac{\text{Net income from Operations}}{\text{Average Total Equity}}$$

- An index measurement of the return the owner of the business receives on his/her money invested. Can be compared to rates of return in other investment opportunities such as stocks, bonds, or saving accounts. The rate of return on equity needs to be larger than the rate of return on assets for borrowing to be advantageous to the business.
- As the rate of return on farm equity rises, the more profitable the operation.
- The data used to calculate Return on Equity (ROE) can be found on the Balance Sheet (Total Assets) and Income Statement (Net Income from Operations, Interest Expense).

Liquidity

Liquidity is the ability of the business to generate sufficient cash to meet cash demands without disturbing the on-going operation of the business. The Current Ratio is one measure used to calculate the liquidity of the business.

Current Ratio

- Calculated as current assets (inventories, cash, accounts receivable, etc.) Divided by current liabilities (operating loan payments, accounts payable, unpaid taxes due, this year's payments on term loans, accrued interest and rent, etc.).

$$\frac{\text{Total Current Assets}}{\text{Total Current Liabilities}} = \text{Current Ratio}$$

- A basic indicator of short-term debt servicing and/or cash flow capacity. It indicates the extent to which current assets, when liquidated, will cover current obligations. It does not predict the time of cash flows during the year or the adequacy of future fund inflows in relation to outflows.
- As the current ratio becomes higher, the liquidity will be greater.
- The data used to calculate the Current Ratio can be found on the Balance Sheet.

Solvency

Solvency measures provide an indication of the firm's ability to repay all financial obligations if all assets were sold and an indication of the ability to continue operations as a viable business after a financial adversity. Debt-to-Asset Ratio and Equity-to-Asset Ratio are two measures used to calculate the solvency of the business.

Debt-to-Asset Ratio

$$\text{Total Liabilities} / \text{Total Assets}$$

- This ratio measures financial position. The debt/asset ratio compares total farm debt obligations owed against the value of the total farm assets.
- This ratio express what proportion of total farm assets is owed to creditors. It is one way to express the risk exposure of farm business.
- The higher the ratio, the more risk exposure of the farm business.
- The data used to calculate the Debt-to-Asset Ratio can be found on the Balance Sheet.

Equity-to-Asset Ratio

$$\text{Total equity} / \text{Total Assets}$$

- The basic leverage of business (i.e., what proportion of total farm assets is owned). Measures the ability of the business to repay all financial obligations if all assets were sold.
- This ratio measures financial position. Specifically, it measures the proportion of total farm assets financed by the owner's equity capital.
- The higher the value of the ratio, the more capital supplied by the owner(s) and less by the creditors.
- The data used to calculate the Equity-to-Asset ratio can be found on the Balance Sheet.

Balance Sheet Format

ASSETS	
Cash	A
Accounts Receivable	B
Inventory	C
Prepaid Expenses	D
<hr/>	
Current Assets	A + B + C + D = E
Non-Current assets At Cost	F
Accumulated Depreciation	G
Land	H
<hr/>	
Net Non-Current Assets	(F - G) + H = I
<hr/>	
Total Assets	E + I = J
LIABILITIES	
Accounts Payable	K
Accrued Expenses	L
Current Portion of Debt	M
Income Taxes Payable	N
<hr/>	
Current Liabilities	K + L + M + N = O
Non-Current Liabilities	P
Land Debt	Q
<hr/>	
Total Liabilities	O + P + Q = R
<hr/>	
EQUITY	
Owner's Equity	J - R = S
Total Liabilities & Equity	R + S = T
CURRENT RATIO	E / O
DEBT-TO-ASSET RATIO	R / J
EQUITY-TO-ASSET RATIO	S / J

Income Statement Format

<i>GROSS REVENUE</i>	
Cash Receipts	A
Non-Cash Transfers-Out	B
Inventory & Accounts Receivable Change	C
<hr/>	
Gross Revenue	A + B + C = D
<i>EXPENSES</i>	
Inventory Change (Expenses)	E
Repairs & Maintenance	F
Labor	G
Feed	H
Depreciation	I
<hr/>	
Total Operating Expense	E + F + G + H + I = J
<hr/>	
Interest Expense	K
<hr/>	
Net Income from Operations	D - (J + K) = L
<hr/>	
Capital Gains (Losses)	M
Taxes	N
<hr/>	
<i>NET INCOME</i>	L + M - N = O

<i>Return on Assets</i>	<u>Net income from operations + Interest Expense</u> Total Average Assets
	<u>(L + K) (from Income Statement)</u> J (from Balance sheet)
<i>Return on Equity</i>	<u>Net income from operations</u> Total Equity
	<u>L (from Income Statement)</u> S (from Balance Sheet)

Statement of Cash Flows Format

<i>CASH FROM OPERATIONS</i>	
Receipts	A
Expenses	B
Interest Expense	C
Taxes	D
<hr/>	
Net Cash From Operations	$A - B - C - D = E$
<i>CASH FROM INVESTING</i>	
Sales	F
Purchases	G
<hr/>	
Net Cash From Investing	$F - G = H$
<i>CASH FROM FINANCING</i>	
New Borrowings	I
Debt Payments (Principal Payments)	J
<hr/>	
Net Cash From Financing	$I - J = K$
<hr/>	
Cash Withdrawals	L
Cash Contributions	M
<hr/>	
<i>NET CASH FLOW</i>	$E + H + K - L + M = N$

Summary

Financial statement analysis requires learning the terminology and relationships presented in this basics section. Calculating these few key ratios provides insight into how the analysis procedure is initiated.

References

- Ittelson, Thomas R. Financial Statements: A Step-By-Step Guide to Understanding and Creating Financial Reports. Career Press, 1998.
- Dr. James M. McGrann, John Parker, Nicole Michalke, and Shannon Neibergs and programmer Clay Kolle. "Finyear Farm/Ranch Managerial Financial Statement Preparation Software and Analysis Guide." Texas Agricultural Extension Service, Texas A&M University, Department of Agricultural Economics, December 29, 1999.
- Downes, John. Goodman, Jordan E. Dictionary of Finance and Investment Terms. Barron's Educational Series, Inc. 5th ed. 1998
- Farm Financial Standards Council. "Financial Guidelines for Agricultural Producers". December 1997, revised. Farm Financial Standards Council, 1212 South Naper Blvd. , Suite 119, Naperville, IL. 60540.
- Dr. James M. McGrann and programmer Clay Kolle. "Farm/Ranch Business. Financial Analysis Decision Aid. FIN Analysis." Texas Agricultural Extension Service, Texas A&M University, Department of Agricultural Economics, May 16, 2000.