

**Audio:**

Welcome to Getting on Track: Understanding Financial Performance. In this course you will learn how to analyze the health of your business using financial ratios.

Click the next arrow to start at the beginning of the course or click the Menu link to select a lesson from the Main Menu. We recommend that you view the lessons in order the first time through the course.

Lesson 5

*Measures of Profitability*



# Measures of Profitability

## Profitability Measures

The Farm Financial Standards Council recommends five ratios for measuring profitability:

- Rate of Return on Assets.
- Rate of Return on Equity.
- Operating **Profit Margin**.
- Net Farm Income.
- Earnings Before Interest, Tax, **Depreciation**, and **Amortization** (EBITDA).



### Audio:

Profitability refers to your ability to generate profits (income minus expenses) over a period of time.

The Farm Financial Standards Council recommends five ratios for measuring profitability; Rate of Return on Assets, Rate of Return on Equity, Operating Profit Margin, Net Farm Income, Earnings Before Interest, Tax, Depreciation, and Amortization (EBITDA).

In this lesson, you will learn how to calculate and evaluate the Rate of Return on Assets and Rate of Return on Equity ratios.

# Measures of Profitability

## Profitability Measures

The Farm Financial Standards Council recommends five ratios for measuring profitability:

- Rate of Return on Assets.
- Rate of Return on Equity.
- Operating **Profit Margin**.
- Net Farm Income
- Earnings Before Interest, Tax, Depreciation, and Amortization (EBITDA).

Profit Margin is the amount by which revenue from sales exceeds costs in a business.



# Measures of Profitability

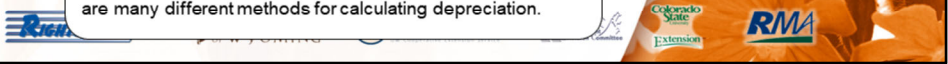
## Profitability Measures

The Farm Financial Standards Council recommends five ratios for measuring profitability:

- Rate of Return on Assets.
- Rate of Return on Equity.
- Operating **Profit Margin**.
- Net Farm Income.
- Earnings **Before Interest, Tax, Depreciation, and Amortization** (EBITDA).



Depreciation is the process of spreading out the cost of an asset over its useful life due to use, age, and obsolescence. The purpose of this process is to provide information on the asset's current value to calculate business expenses. There are many different methods for calculating depreciation.



# Measures of Profitability

## Profitability Measures

The Farm Financial Standards Council recommends five ratios for measuring profitability:

- Rate of Return on Assets.
- Rate of Return on Equity.
- Operating **Profit Margin**.
- Net Farm Income.
- Earnings Before Interest, Tax, **Depreciation**, and **Amortization** (EBITDA).



Amortization is the reduction of the value of an asset by prorating its cost over a period of years.





# Measures of Profitability

## Rate of Return on Assets

$$\frac{(\text{Net Farm Income} + \text{Farm Interest} - \text{Value of Operation Labor \& Management})}{\text{Average Farm Assets}} = \text{Rate of Return on Assets}$$

*These values may be found on the income statement, statement of owner equity, and book value balance sheet.*



### Audio:

Rate of return on assets is calculated with the formula shown on screen.

These values can be found on the income statement and balance sheet.

The results of this calculation will help you compare your earnings to the value of the assets used in the production process

# Measures of Profitability

## Rate of Return on Equity

$$\frac{\left( \begin{array}{l} \text{Net Farm} \\ \text{Income} \end{array} - \begin{array}{l} \text{Value of Operation} \\ \text{Labor \& Management} \end{array} \right)}{\text{Average Farm Net Worth}} = \begin{array}{l} \text{Rate of Return} \\ \text{on Equity} \end{array}$$

*These values may be found on the income statement, statement of owner equity, and book value balance sheet.*



### Audio:

Rate of return on equity is calculated with the formula shown on screen.

These values can be found on the income statement and balance sheet.

Rate of return on equity compares the earnings of the business to the business owner's investment in the production process.



# Measures of Profitability

## Calculate the Ratios

Download *Jack and Joanie's financial statements*.  
Then, calculate the rate of return on assets.  
Click *Submit* to check your answers.

[Jack and Joanie's financial statements](#) 

Rate of Return on Assets

$$\frac{(\text{Net Farm Income} + \text{Farm Interest} - \text{Value of Operation Labor \& Management})}{\text{Average Farm Assets}} = \text{[ ]}$$


Calculator



### Audio:


Now, try calculating the ratios. Click on the link to download Jack and Joanie's financial statements. Then, calculate Jack and Joanie's rate of return on assets. Click the calculator icon to access a calculator tool.

Click *Submit* to check your answer.

# Measures of Profitability

## Calculate the Ratios


Download *Jack and Joanie's financial statements*.  
Then, calculate the rate of return on assets.  
Click *Submit* to check your answers.

Jack and Joanie's financial statements 

**Rate of Return on Assets**

$$\frac{(\text{Net Farm Income} + \text{Farm Interest} - \text{Value of Operation Labor \& Management})}{\text{Average Farm Assets}} = .12$$

That's correct! You have correctly calculated Jack and Joanie's rate of return on assets.

 Calculator







# Measures of Profitability

## Calculate the Return on Assets

Calculating the Rate of Return on Assets

**Step 6:**  
Determine the average farm assets on Jack and Joanie's balance sheet by adding the total assets from the past two reporting periods and dividing it by 2.

$$\frac{139,544 + 136,466}{2} = 138,005$$

**Step 7:**  
Divide the result of Step 5 by this value.

$$\frac{15,907}{138,005} = 0.12$$

FARM BALANCE SHEET - Asset Values									
Values in thousands (\$K) and entered in this table. Values in blue color/box are calculated.									
Assets	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025	12/31/2026	12/31/2027
Current Assets	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Current Liabilities	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Net Current Assets	0	0	0	0	0	0	0	0	0
Non-Current Assets	138,544	135,466	137,000	139,000	141,000	143,000	145,000	147,000	149,000
Non-Current Liabilities	0	0	0	0	0	0	0	0	0
Total Assets	139,544	136,466	137,000	139,000	141,000	143,000	145,000	147,000	149,000
Total Liabilities	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total Equity	138,544	135,466	136,000	138,000	140,000	142,000	144,000	146,000	148,000



# Measures of Profitability

## Calculate the Ratios

Download *Jack and Joanie's financial statements*.  
Then, calculate the rate of return on assets.  
Click Submit to check your answers.

Rate of Return on Equity

$$\frac{(\text{Net Farm Income} - \text{Value of Operation Labor \& Management})}{\text{Average Farm Net Worth}} = \text{[ ]}$$

Submit



Calculator



### Audio:

Now, try calculating Jack and Joanie's rate of return on equity. Click the calculator icon to access a calculator tool.

Click Submit to check your answer.



# Measures of Profitability

## Calculate the Ratios


Download *Jack and Joanie's financial statements*.  
Then, calculate the rate of return on assets.  
Click *Submit* to check your answers.

Rate of Return on Equity

$$\frac{(\text{Net Farm Income} - \text{Value of Operation Labor \& Management})}{\text{Average Farm Net Worth}} = .24$$

Submit

That's correct! You have correctly calculated Jack and Joanie's rate of return on equity.

 Calculator



# Measures of Profitability

## Calculate the Return on Equity

### Calculating the Rate of Return on Equity

**Step 1:**  
Locate the net farm income on Jack and Joanie's income statement

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Net Farm Income</b>	<b>10,000</b>	<b>12,000</b>	<b>15,000</b>	<b>18,000</b>	<b>20,000</b>	<b>22,000</b>	<b>24,000</b>	<b>26,000</b>	<b>28,000</b>	<b>30,000</b>	<b>32,000</b>

Next Slide





# Measures of Profitability

## Calculate the Return on Equity

Calculating the Rate of Return on Equity

**Step 4:**  
Determine the average farm net worth on Jack and Joanie's balance sheet by adding the total net worth from the past two reporting periods and dividing it by 2.

$$\frac{51,621 + 60,539}{2} = 56,080$$

**Step 5:**  
Divide the result of Step 3 by this value.

$$\frac{13,267}{56,080} = 0.24$$

Assets	2017/18		2018/19		2019/20		2020/21		2021/22		2022/23	
	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
<b>Current Assets</b>												
Cash	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000
Accounts Receivable	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000
Inventory	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000
Prepaid Expenses	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000
<b>Non-Current Assets</b>												
Land	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Buildings	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Equipment	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Investments	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Other Non-Current Assets	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
<b>Total Non-Current Assets</b>	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000
<b>Total Assets</b>	159,000	171,000	179,000	186,000	191,000	197,000	203,000	209,000	215,000	221,000	227,000	233,000
<b>Current Liabilities</b>												
Accounts Payable	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000
Notes Payable	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000
Other Current Liabilities	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000
<b>Total Current Liabilities</b>	4,000	7,000	10,000	13,000	16,000	19,000	22,000	25,000	28,000	31,000	34,000	37,000
<b>Total Liabilities</b>	4,000	7,000	10,000	13,000	16,000	19,000	22,000	25,000	28,000	31,000	34,000	37,000
<b>Total Equity</b>	155,000	164,000	169,000	173,000	175,000	178,000	181,000	184,000	187,000	190,000	193,000	196,000



# Measures of Profitability

## Evaluating the Results

Financial ratios are most valuable when you have a value to compare them to. This might be your ratio calculations from previous years or industry **benchmarks**.

**Benchmarks:** blood pressure

Low	Moderate	High
15 - 20 No action necessary	12 - 15 Humidification of air, administer bronchodilators	< 12 Administer O <sub>2</sub> or ventilate

These numbers are examples only. Always consult a doctor to evaluate real medical risk.

Financial benchmarks work much the same way. Variations will occur between size of operations, owned versus leased, types of operation, location of operation, and other factors.



## Audio:

Financial ratios are most valuable when you have something to compare them to. This might be ratio calculations from previous years or industry benchmarks.

Benchmarks are guidelines or general rules of thumb related to a specific industry. For instance, normal respiration is between 15 and 20 breaths per minute. However, body respiration can vary with age, emotional state, activity level, and other variables.

Thus, there is no single respiration rate that can be considered normal. The benchmark range simply allows a doctor to interpret the measurement and to decide if further action is required.

Financial benchmarks work much the same way.

# Measures of Profitability

**Evaluating the Results**

Financial ratios are most valuable when you have a value to compare them to. This might be your ratio calculations from previous years or industry **benchmarks**.

**Benchmarks: blood pressure**

Low	Medium	High
15 - 20		
No action necessary		
These numbers are examples of normal blood pressure. They do not represent a medical risk.		

**Benchmarks:**  
Guidelines or rules of thumb for the parameters that represent a "normal" state or situation. In financial benchmarks the "normal" state is dependent on a number of variables including the industry, market, and size/type of operation in which a particular result is generated.

Financial benchmarks work much the same way. Variations will occur between size of operations, owned versus leased, types of operation, location of operation, and other factors.

**Audio:**

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Financial benchmarks work much the same way.



# Measures of Profitability

## Profitability Ratio Benchmarks

Profitability Benchmarks	Low	Moderate	High
Rate of Return on Assets	> 0.05	0.01 - 0.05	< 0.01
Rate of Return on Equity	> 0.1	0.05 - 0.1	0.5

**Possible Actions For Improvement:** Increase the value of production, reduce production costs where prudent, control or reduce family living withdrawals, improve marketing practices, properly structure debt to revenue generation.



### Audio:

Some benchmarks for profitability ratio values are shown on screen.

The benchmarks are meant to be only a guideline for comparison purposes.

The correlated benchmarks are presented in terms of green, yellow, and red lights. A green light represents a financial strength with low risk. A yellow light corresponds to moderate risk, and a red light means weakness and high risk. A green light doesn't guarantee success, nor does a red light imply failure. A weakness in one area may be overcome by strengths in other areas.

Each farm operator should establish specific benchmarks for their specific farm situation.

# Measures of Profitability

## What Have You Learned?

Question 01 of 04

Select your answer(s) and click Submit for feedback.

According to industry benchmarks, what level of risk does Jack and Joanie's rate of return on assets indicate?

- Low Risk
- Moderate Risk
- High Risk

Submit



### Audio:

Check what you have learned about measures of profitability by answering the questions on screen. Click Submit to check your answers.

# Measures of Profitability

## What Have You Learned?

Question 01 of 04

Select your answer(s) and click Submit for feedback.

According to industry benchmarks, what level of risk does Jack and Joanie's rate of return on assets indicate?

- Low Risk
- Moderate Risk
- High Risk

Submit

Next Question

**That's correct!**  
Jack and Joanie's rate of return on assets is in the low risk range.



# Measures of Profitability

## What Have You Learned?

Question 02 of 04

Select your answer(s) and click Submit for feedback.

According to industry benchmarks, what level of risk does Jack and Joanie's rate of return on equity indicate?

- Low Risk
- Moderate Risk
- High Risk

submit



# Measures of Profitability

## What Have You Learned?

Question 02 of 04

Select your answer(s) and click Submit for feedback.

According to industry benchmarks, what level of risk does Jack and Joanie's rate of return on equity indicate?

- Low Risk
- Moderate Risk
- High Risk

Submit

Next Question

**That's correct!**  
Jack and Joanie's rate of return on equity is in the moderate risk range.



# Measures of Profitability

## What Have You Learned?

Question 03 of 04

Select your answer(s) and click Submit for feedback.

What can Jack and Joanie do to improve their rate of return on assets?

- Increase net farm income
- Increase withdrawals for operator labor and management
- Invest in profitable assets
- Sell unproductive (unnecessary) assets

Submit





# Measures of Profitability

## What Have You Learned?

Question 03 of 04

Select your answer(s) and click Submit for feedback.

What can Jack and Joanie do to improve their rate of return on assets?

- Increase net farm income
- Increase withdrawals for operator labor and management
- Invest in profitable assets
- Sell unproductive (unnecessary) assets

Submit

Next Question

**That's correct!**

Increasing net farm income, investing in profitable assets and selling unproductive ones will improve rate of return on assets.



# Measures of Profitability

## What Have You Learned?

Question 04 of 04

Select your answer(s) and click Submit for feedback.

What can you do to increase net farm income?

- Better manage to reduce expenses
- Select enterprises with a higher net return
- Sell products at a lower market price
- Increase expenses while reducing revenues

Submit



# Measures of Profitability

## What Have You Learned?

Question 04 of 04

Select your answer(s) and click Submit for feedback.

What can you do to increase net farm income?

- Better manage to reduce expenses
- Select enterprises with a higher net return
- Sell products at a lower market price
- Increase expenses while reducing revenues

Submit

**That's correct!**  
Reducing expenses and pursuing enterprises with higher net returns will increase farm income.

