Ratio Analysis

by Sophia

WHAT'S COVERED

This tutorial will cover the topic of ratio analysis.

Our discussion breaks down as follows:

1. Profitability Ratios

Before we begin our discussion on ratio analysis, it's important to have an understanding of a**financial ratio**, which evaluates the relationship between specific items on a financial statement.

The first step of ratio analysis is calculating our profitability ratios, which measure the operating performance of a company, helping a business to understand and evaluate its performance.

Today we will be covering the following profitability ratios:

Profitability Ratio	Measurement
Rate of return on sales	Measures managerial efficiency, as well as profitability
Return on total assets	Measures the effective use of assets and managerial efficiency
Asset turnover	Measures the use of assets to make sales

TERM TO KNOW

Financial Ratio
Evaluates the relationship between specific items on a financial statement.

1a. Rate of Return on Sales

The formula for rate of return on sales is net income divided by net sales. This ratio will tell us how profitable we are as a business.

$$\textit{Rate of Return on Sale} = \frac{\textit{Net Income}}{\textit{Net Sales}}$$

Suppose net income is $257,500 and net sales is $925,000, we would get a rate of return on sales of 27.8%.

$$\text{Rate of Return on Sales} = \frac{257{,}500}{925{,}000} = 27.8\%$$

1b. Return on Total Assets

Next, the formula for return on total assets is income before interest expense and taxes, divided by total assets. This ratio is going to tell us how effectively we use our assets to generate income.

$$\text{Return on Total Assets} = \frac{\text{Income before interest expense and taxes}}{\text{Total assets}}$$

Suppose the income before interest expense and taxes is $262,500 and total assets is $980,000, then we get a return on total assets of 26.8%.

$$\text{Return on Total Assets} = \frac{262{,}500}{980{,}000} = 26.8\%$$

1c. Asset Turnover Ratio

Lastly, the formula for asset turnover ratio is net sales divided by total assets. This ratio helps us measure the use of assets to make sales.

$$\text{Asset Turnover} = \frac{\text{Net Sales}}{\text{Total Assets}}$$

Suppose net sales is $925,000 and total assets is $980,000, we can see that our assets turn over 0.9 times during the year.

$$\text{Asset Turnover} = \frac{925{,}000}{980{,}000} = 0.9\ \text{times}$$

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2. Liquidity Ratios

Now that we've learned how to calculate profitability ratios, let's turn our attention to liquidity ratios. Liquidity ratios measure the ability of a company to pay debts when they are due. In other words, they help us understand our ability to pay our debt obligations.

Today we will discuss the following liquidity ratios:

Liquidity Ratio	Measurement
Current Ratio	Measures how much in current assets a company has to pay its current liabilities
Inventory Turnover	Measures the number of times a company's inventory is sold and replaced

2a. Current Ratio

The formula for current ratio is current assets divided by current liabilities.

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

Suppose that current assets is $580,000 and current liabilities is $155,000, we get a current ratio of 3.74, which means we have 3.74 times more current assets than we do current liabilities.

$$\textit{Current Ratio} = \frac{580{,}000}{155{,}000} = 3.74$$

2b. Inventory Turnover

Now let's turn our attention to inventory turnover. Inventory turnover is calculated as cost of goods sold divided by average inventory.

$$\textit{Inventory Turnover} = \frac{\textit{Cost of Goods Sold}}{\textit{Average Inventory}}$$

Suppose cost of goods sold is $450,000 and average inventory is $225,000, we see that inventory turnover is 2.0 times. This is the number of times the inventory is sold and replaced.

$$\textit{Inventory Turnover} = \frac{450{,}000}{225{,}000} = 2.0 \textit{ times}$$

It's important to note that in order for these liquidity ratios to have context, we would need to know information such as what our ratios were last year, other companies' ratios, and the industry standards.

SUMMARY

Today we learned how to perform ratio analysis. We learned how to calculate **profitability ratios**, looking at **rate of return on sales**, **return on total assets**, as well as **asset turnover**. W also learned how to calculate **liquidity ratios** by looking at **current ratio** and **inventory turnover**.

Source: Adapted from Sophia instructor Evan McLaughlin.

TERMS TO KNOW

Financial Ratio
Evaluates the relationship between specific items on a financial statement.