Financial Ratios

Financial ratios are a valuable and easy way to interpret the numbers found in statements.

Ratios help to identify a company's financial strengths and weaknesses.

Ratios need to be compared to be useful.

- Company's past performance
- Industry ratios
- Competitors

Different ratios analyse different aspects of a company's performance.

Profitability
Profitability ratios measure the company's ability to generate a return on its resources

Return on Sales (ROS)	
Formula:	$\frac{\text{Net Income}}{\text{Total Revenue}}$
Measure:	Indicates the level of profit from each dollar of sales
Example:	$\frac{\text{Net Income} = 100{,}000}{\text{Total Revenue} = 500{,}000}$ ROS = 20%
Explanation:	There is a profit equal to 20% of sales or $0.20 profit for every $1 sold
Interpretation:	The higher the number the better

Return on Assets (ROA)	
Formula:	$\frac{\text{Operating Income (Net Income before Taxes)}}{\text{Total Assets}}$
Measure:	Measures the productivity of assets
Example:	$\frac{\text{Operating Income} = 127{,}000}{\text{Total Assets} = 905{,}000}$ ROA = 14%
Explanation:	Each dollar of assets generated $0.14 of income
Interpretation:	The higher the number the better

Return on Equity (ROE) or Return on Net Worth

Formula:

$$\frac{\text{Net Income - Dividends}}{\text{Total Shareholders Equity}}$$

Measure: Measures the productivity of money invested by shareholders (Shareholders earnings compared to shareholders equity)

Example:

Net Income:	$75,000
Dividends:	$9,000
Shareholders Equity:	$477,000

$$\frac{75{,}000 - 9{,}000}{477{,}000}$$

ROE = 13.8%

Explanation: Each dollar of OE generated $0.138 of net income
Interpretation: The higher the number the better

Earnings per Share (EPS)

Formula:

$$\frac{\text{Net Income - Dividends}}{\text{Number of Shares outstanding}}$$

Measure: Measures the amount of net income generated for each share of stock

Example:

Net Income:	$75,000
Dividends:	$9,000
Shareholders Equity:	5,000

$$\frac{75{,}000 - 9{,}000}{5{,}000}$$

EPS = $13.20

Explanation: Each share generated $13.20 of net income
Interpretation: The higher the number the better

Price-Earning Ratio (P/E ratio)	
Formula:	$\frac{\text{Stock Price}}{\text{Earnings Per Share}}$
Measure:	The relationship between the market price and earnings per share
Example:	Stock Price: $132 Earning Per Share: $13.20 $\frac{\$132}{\$13.20}$ P/E = $10
Explanation:	Investors paid a premium of $10 for each $1 of earnings
Interpretation:	A high P/E means that the market believes that earnings will increase in the future

Profit Margin Ratio	
Formula:	$\frac{\text{Net Income}}{\text{Net Sales}}$
Measure:	the company's ability to earn net income from sales
Example:	Net Income: $42,325 Net Sales: $180,980 $\frac{\$42,325}{\$180,980}$ Profit Margin = 23.4%
Explanation:	For every dollar in sales, this business is generating a little more than 23 cents net profit
Interpretation:	The higher the profit margin ratio the better.

Return on Common Shareholders Equity (ROCE)	
Formula:	$\frac{\text{Net Income After Taxes}}{\text{Average Common Shareholders Equity}}$
Average Stockholders' Equity	*= (Beginning Stockholders' Equity + Ending Stockholders' Equity) / 2*
Measure:	business success in earning a net income for its owners
Example:	Net Income: $42,325 Average Common Equity: $360,980 $\frac{\$42,325}{\$360,980}$ ROCE = 11.7%
Explanation:	For every dollar common shareholders have invested the company generates 12 cents.
Interpretation:	The higher the ratio the better.

Liquidity

Liquidity ratios measure the company's ability to pay for short term liabilities. Note: These measures are more critical for companies with lower market capitalization.

Current Ratio	
Formula:	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
Measure:	Company's ability to pay short-term liabilities
Example:	Current Assets: $390000 Current Liabilities: $112,000 $\frac{\$390000}{\$112,000}$ Current Ratio = 3.5
Explanation:	The company has $3.50 of current assets for every dollar of current liabilities
Interpretation:	A current ratio greater than one means that the company has enough current assets to cover current liabilities. If the current is too high the company is holding on to too much cash.

Quick Ratio

Formula:

$$\frac{\text{Current Assets - Inventory}}{\text{Current Liabilities}}$$

Measure: Company's ability to convert current assets in cash in order to pay short-term liabilities

Example:

Current Assets:	$390000
Inventory:	$235000
Current Liabilities:	$112,000

$$\frac{\$390000 - \$235000}{\$112,000}$$

Quick Ratio = 1.4

Explanation: The company has $1.40 of *liquid* current assets for every dollar of current liabilities

Interpretation: A high quick ratio greater than one means that the company has enough current assets to cover current liabilities.

Working Capital

Formula: Current Assets - Current Liabilities

Measure: The amount of cash and cash substitutes on hand after payment of current liabilities

Example:

Current Assets:	$390000
Current Liabilities:	$112,000

$390,000 - $112,000

Working Capital = $278,000

Explanation: The company has $278,000 worth of current assets in excess of their current liabilities.

Interpretation: Working capital is especially important to small cap companies

Efficiency Ratios

Efficiency evaluates how well the company manages its assets

Inventory Turnover Rate	
Formula:	$\frac{\text{Cost of Goods Sold}}{\text{Inventory}}$
Measure:	How many times during one accounting period the company is able to turn over (sells) its inventory
Example:	COGS: $530,000 Inventory: $150,000 Current Liabilities: $112,000 $\frac{\$530,000}{\$150,000}$ Inventory Turnover Rate = 3.5 times
Explanation:	The company turned over (sold everything) 3.5 times during the accounting period.
Interpretation:	A high inventory turnover rate means that the sells it's inventory quickly. It indicates a well managed company.

Leverage Ratios

Measures the company's level of long term debt and the company's ability to service that debt

Debt to Equity Ratio	
Formula:	$\frac{\text{Total Liabilities}}{\text{Shareholders Equity}}$
Measure:	A measure of a company's financial leverage
Example:	Total Liabilities: $312,000 Shareholders Equity $477,000 $\frac{\$312,000}{\$477,000}$ Debt to equity Ratio = 0.65
Explanation:	The company's assets are financed at a ratio $0.65 of debt to every one dollar of Equity. The company is not leveraged.
Interpretation:	A debt/equity ratio greater than 1 means that a company has financed its growth with debt. A debt/equity ratio less than 1 means that a company has financed its growth with equity (retained earnings or new investment).

Debt Ratio	
Formula:	Total Liabilities / Total Assets
Measure:	The percentage of total assets financed by debt. A measure of a company's financial leverage
Example:	Total Liabilities: $312,000 Total Assets: $950,000 $312,000 / $950,000 Debt to equity Ratio = 32.8%
Explanation:	32.8% of the company's assets are financed by debt. The company is not leveraged.
Interpretation:	The lower the debt to equity ratio the better.

Interest Coverage Ratio	
Formula:	Operating Income / Interest Expense
Measure:	The ability of a company to cover the annual interest obligation
Example:	Operating Income: $127,000 Annual Interest Expense: $24,000 $127,000 / $24,000 Interest Coverage Ratio = 5.3 times
Explanation:	The company has enough income to pay their interest expenses 5.3 times
Interpretation:	The higher the interest coverage ratio the better.

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