

## USES OF PERFORMANCE RATIOS

Ratios are industry dependent. Your company should be compared with other firms in the same industry. These are the ratios we can identify for your business:

- LIQUIDITY RATIOS
- EFFICIENCY RATIOS
- SOLVENCY RATIOS
- PROFITABILITY RATIOS

### LIQUIDITY RATIOS

Liquidity ratios are designed to evaluate whether a company will be able to meet its upcoming obligations. Creditors, suppliers and short-term cash lenders want to be assured that they will be paid on schedule. A firm with poor liquidity may have to defer necessary purchases, and operations will suffer as a result:

Current Ratio – current assets divided by the current liabilities.

*Example:*

$$\frac{\$400,000 \text{ (Current Assets)}}{\$170,000 \text{ (Current Liabilities)}} = 2.35$$

Quick Ratio – sum of cash, marketable securities, and accounts receivable, divided by the current liabilities.

*Example:*

$$\frac{\$20,000 \text{ (Cash)} + \$40,000 \text{ (Mktl Sec)} + \$156,000 \text{ (A/R)}}{\$170,000 \text{ (Current Liabilities)}} = 1.27$$



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## EFFICIENCY RATIOS

Efficiency ratios measure the performance of accounts receivable and inventory. Storage inventory is often costly, and receivables represent cash not yet received. Rapid turnover of both inventory and receivables minimizes the capital that is tied up:

### Receivables Ratios

Receivables Turnover Ratio:

$$\frac{\text{Annual Sales}}{\text{Average A/R for Year}} = \text{Receivables Turnover Ratio}$$

Days Receivables Ratio:

$$\frac{365 \text{ (days in one year)}}{\text{Receivables Turnover Ratio}} = \text{Average Days Receivables}$$

### Inventory Ratios

Inventory Turnover Ratio:

$$\frac{\text{Annual Cost of Goods Sold}}{\text{Average Inventory for Year}} = \text{Inventory Turnover Ratio}$$

Days Inventory:

$$\frac{365 \text{ (days in one year)}}{\text{Inventory Turnover Ratio}} = \text{Days Inventory}$$



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## SOLVENCY RATIOS

Solvency ratios measure the risk of a firm's defaulting on its debt. The categories include debt to equity ratios and interest and cash flow coverage ratios:

### Debt to Equity Ratios

Total Debt to Total Assets – The most fundamental of equity ratios measure the proportion of assets which is financed through owners' equity. This can be described in any of several basically equivalent ratios:

$$\frac{\text{Liabilities}}{\text{Assets}} \quad \frac{\text{Equity}}{\text{Assets}} \quad \frac{\text{Liabilities}}{\text{Equity}}$$

Divide each side by assets:

$$\begin{array}{r} \text{Assets} = \text{Liabilities} + \text{Owners' Equity} \\ \text{Assets} = \text{Liabilities} + \text{Owners' Equity} \\ \text{Assets} \quad \text{Assets} \quad \text{Assets} \\ \text{Assets} = \text{Liabilities} + \text{Owners' Equity} \\ \text{Assets} \quad \text{Assets} \quad \text{Assets} \end{array}$$

Calculating the liabilities to owners' equity ratio is then a simple process of:

$$\frac{\frac{\text{Liabilities}}{\text{Assets}}}{\frac{\text{Owners' Equity}}{\text{Assets}}} = \frac{\text{Liabilities}}{\text{Owners' Equity}}$$

Calculating the company's assets financed through liabilities:

$$\frac{\$316,000 \text{ (Total Liabilities)}}{\$662,000 \text{ (Total Assets)}} = .48$$

Calculating the company's assets financed through owners' equity:

$$\frac{\$346,000 \text{ (Owners' Equity)}}{\$662,000 \text{ (Total Assets)}} = .52$$

Invested Capital – The debt to equity ratios use total liabilities to represent debt. Sometimes it's more revealing to use only invested capital. Both owners' equity and long-term debt represent capital invested in the company.

$$\frac{\text{Long-Term Debt}}{\text{Owners' Equity}}$$

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## Interest & Cash Flow Ratios

Interest Coverage Ratios – Failure to meet interest payments represents default and can precipitate bankruptcy.

*Example:*

$$\frac{\$68,500 \text{ (Pre-tax Income)} + \$17,000 \text{ (Interest Exp.)}}{\$17,000 \text{ (Interest Exp.)}} = 5.03$$

Cash Flow Coverage Ratios – Cash flow coverage adds depreciation back into the numerator, since it isn't a cash charge; and it adds other fixed charges besides interest to the denominator. Any fixed charge that must be met to maintain solvency can be included here (i.e. rent).

*Example:*

$$\frac{\$68,500 + \$17,000 + \$28,000 \text{ (Depreciation)}}{\$17,000 \text{ (Interest Exp.)}} = 6.68$$



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## PROFITABILITY RATIOS

There are many different ways to look at profitability.

Margins:

$$\frac{\text{Sales} - \text{Cost of Goods Sold}}{\text{Sales}} = \text{Gross Margin}$$

Return on Assets:

$$\frac{\text{Total Assets 12/31/01} + \text{Total Assets 12/31/02}}{2} = \text{Average Total Assets}$$

$$\frac{\text{Net Income}}{\text{Average Total Assets}} = \text{Return on Assets}$$

Return on Common Equity:

$$\frac{\text{Net Income}}{\text{Owners' Equity} - \text{Preferred Stock}} = \text{Return on Common Equity}$$

Price Earnings Ratio:

$$\frac{\$40.00 \text{ (Share Price)}}{\$3.16 \text{ (Earnings Per Share)}} = 12.66$$

Comparing a company's ratios to industry averages is very useful in pointing out potential problem areas.



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