

Financial Management

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1 Ratios

Ratios can be classified in different groups

1.1 Liquidity ratios

Measure firm's ability to pay-off short term obligations.

Cash ratio

$$= \frac{\text{cash} + \text{cash equivalent}}{\text{current liabilities}} \quad (1)$$

Quick ratio (or acid test ratio)

$$= \frac{\text{current assets} - \text{inventory}}{\text{current liabilities}} \quad (2)$$

Current ratio

$$= \frac{\text{current assets}}{\text{current liabilities}} \quad (3)$$

1.2 Asset coverage ratio

Are long term assets financed with long-term capital?

Fixed assets coverage 1

$$= \frac{\text{equity}}{\text{fixed assets}} \quad (4)$$

Fixed assets coverage 2

$$= \frac{\text{equity} + \text{long-term liabilities}}{\text{fixed assets}} \quad (5)$$

Long-term coverage 3

$$= \frac{\text{equity} + \text{long-term liabilities}}{\text{fixed assets} + \text{"long term" part of current assets}} \quad (6)$$

1.3 Financing ratios (Gearing)

Evaluate overall debt position in light of the asset base and earning power

Equity ratio

$$= \frac{\text{equity}}{\text{total capital}} \quad (7)$$

Debt ratio

$$= 1 - \text{equity ratio} = \frac{\text{liabilities}}{\text{total capital}} \quad (8)$$

Debt/Equity ratio

$$= \frac{\text{debt ratio}}{\text{equity ratio}} = \frac{\text{liabilities}}{\text{equity}} \quad (9)$$

Interest coverage ratio Can I pay the interest back ?

$$= \frac{\text{profit} + \text{interest expenses} + \text{taxes}}{\text{interest expenses}} \quad (10)$$

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Debt repayment capacity

$$= \frac{\text{operating cash flow}}{\text{liabilities}} \quad (11)$$

1.4 Investment ratios

Assess the level of investments

Investment ratio

$$= \frac{\text{investments}}{\text{sales revenues}} \quad (12)$$

Expansion ratio

$$= \frac{\text{investments}}{\text{depreciation}} \quad (13)$$

Self-financing ratio

$$= \frac{\text{operating CF}}{\text{investments}} \quad (14)$$

1.5 Efficiency Ratios

Receivables turnover ratio (debtors turnover)

$$= \frac{\text{sales}}{(\text{average}) \text{ receivables}} \quad (15)$$

Average collection period (debtors days)

$$= \frac{365}{\text{receivables turnover}} [\text{days}] \quad (16)$$

Inventory turnover ratio (stock turnover)

$$= \frac{\text{cost of goods sold}}{(\text{average}) \text{ inventories}} \quad (17)$$

Average inventory period (stock days)

$$= \frac{365}{\text{inventory turnover}} [\text{days}] \quad (18)$$

Payables turnover ratio (creditors turnover)

$$= \frac{\text{cost of goods sold}}{(\text{average}) \text{ payables}} \quad (19)$$

Average settlement period (creditors days)

$$= \frac{365}{\text{creditors turnover}} [\text{days}] \quad (20)$$

Asset turnover ratio

$$= \frac{\text{sales revenues}}{\text{assets}} \quad (21)$$

1.6 Profitability ratios

Measure the ability of the firm to earn an adequate return on sales, total assets and invested capital.

Gross profit Margin

$$= \frac{\text{gross profit}}{\text{sales}} \quad (22)$$

Net Profit Margin - Return on Sales (ROS)

$$= \frac{\text{Net income}}{\text{Sales}} \quad (23)$$

Return on assets (investments)

$$= \frac{\text{net income}}{\text{sales}} \quad (24)$$

Return on total capital

$$= \frac{\text{net income} + \text{interest}}{\text{total capital}} \quad (25)$$

Return on equity (ROE)

$$= \frac{\text{net income}}{\text{equity}} \quad (26)$$

EBIT margin

$$= \frac{\text{EBIT}}{\text{sales}} \quad (27)$$

Which EBIT

- EBITDA: Earnings Before Interests Taxes Depreciation and Amortization
- EBIT: Earnings Before Interests and Taxes
- EBT: Earnings Before Taxes

1.7 Market Value Ratios (Shareholder ratios)

Earnings per share (EPS)

$$= \frac{\text{net income}}{\text{number of shares}} \quad (28)$$

Price Earnings ratio (P/E)

$$= \frac{\text{market price of share}}{\text{EPS}} \quad (29)$$

Dividend pay out ratio

$$= \frac{\text{dividend}}{\text{net income}} \quad (30)$$

Operating cash flow per share

$$= \frac{\text{operating cash flow}}{\text{number of shares}} \quad (31)$$

Book Value Ratio

$$= \frac{\text{equity}}{\text{number of shares}} \quad (32)$$

The DuPont Chart - ROA

$$ROA = \underbrace{\frac{\text{net income}}{\text{turnover}}}_{ROS} \underbrace{\frac{\text{turnover}}{\text{assets (=capital)}}}_{CTO} \quad (33)$$

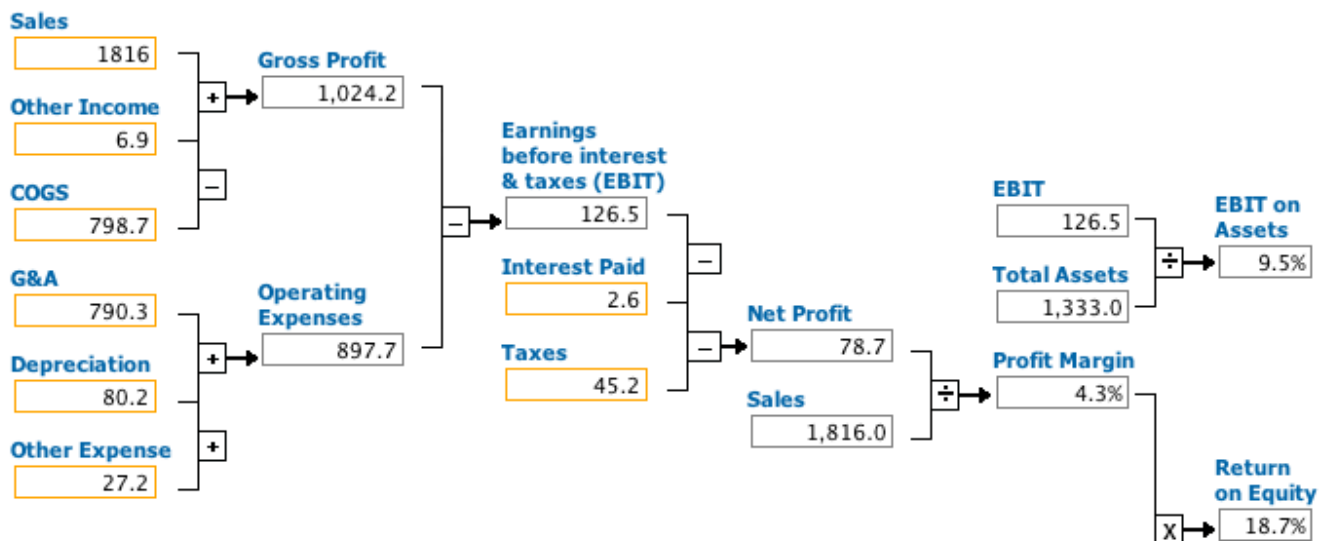
where CTO is the capital turnover.

The DuPont Chart - ROE

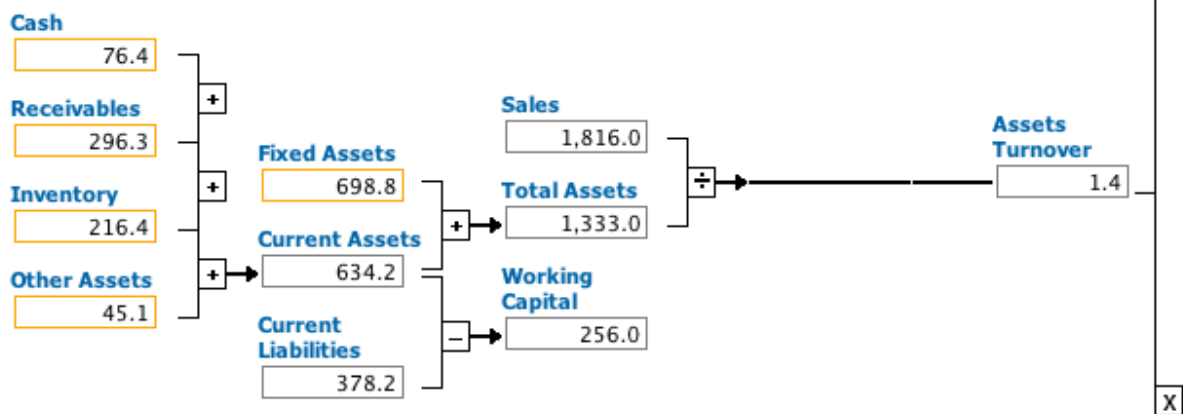
$$ROE = \underbrace{\frac{\text{net income}}{\text{turnover}}}_{ROS} \underbrace{\frac{\text{turnover}}{\text{assets (=capital)}}}_{CTO} \underbrace{\frac{\text{total capital}}{\text{equity}}}_{FL} \quad (34)$$

where FL is the financial leverage

Income Statement



Assets



Liabilities & Equity

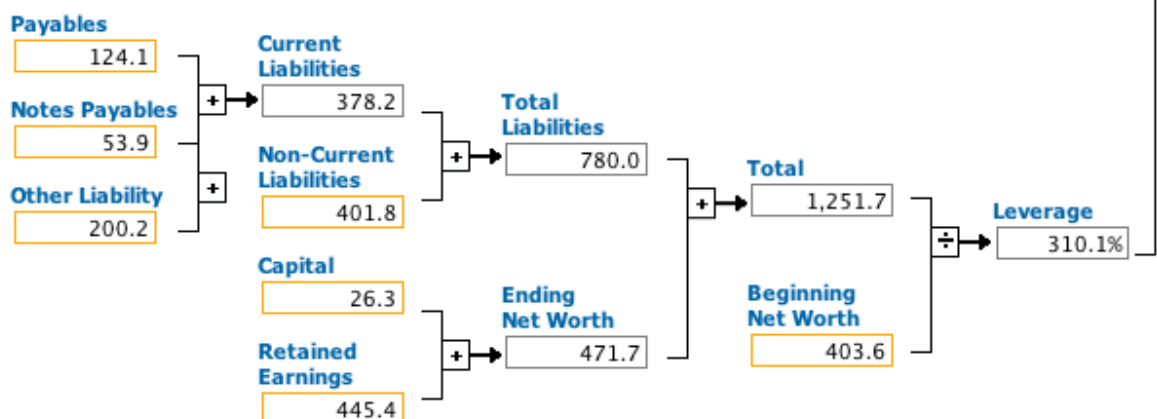


Figure 1: The DuPont Chart

2 Working Capital

$$\text{Working capital} = \text{Current assets} - \text{Short-term liabilities} \quad (35)$$

Assure "working" of business without wasting short-term resources.

2.1 Working Capital Management

- Cash Management
- Receivables Management
- Payables Management
- Inventory Management

2.2 Cash Cycle

$$\begin{aligned} \text{Cash Cycle time} &= \text{Inventory (Day)} \\ &- \text{Payables (Day)} \\ &+ \text{Receivables (Day)} \end{aligned}$$

Use Capital Turnover (CTO) ratios to evaluate.

Cash invested in working capital has very low return

3 Cash Flow