

Operational Cycle Management

Invested capital = Cash + Working capital requirement + Net fixed assets

Capital employed = Short-term debt + Long-term debt + Owners' equity

$$\begin{aligned}
 &\text{Working capital requirement (WCR)} \\
 &= \\
 &[\text{Operating assets}] - [\text{Operating liabilities}] \\
 &= \\
 &[\text{Accounts receivable} + \text{Inventories} + \text{Prepaid expenses}] \\
 &\quad - [\text{Accounts payable} + \text{Accrued expenses}]
 \end{aligned}$$

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Ending inventories}}$$

$$\text{Average collection period} = \frac{\text{Accounts receivable}_{\text{end}}}{\text{Average daily sales}}$$

$$\text{Average payment period} = \frac{\text{Accounts payable}_{\text{end}}}{\text{Average daily purchases}}$$

Considering: Annual Purchases = COGS + Final Inventories – Initial Inventories

Liquidity

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$\text{Acid test or quick ratio} = \frac{\text{Cash} + \text{Accounts receivable}}{\text{Current liabilities}}$$

Net cash-flow from operating activities = EAT + Depreciation expenses - Change in WCR

Profitability

- **Return on sales (ROS)** = EAT/sales
- **Return on assets (ROA)** = EAT/total assets
- **Return on invested capital (ROIC_{BT})** = EBIT/IC
- **Return on invested capital (ROIC_{AT})** = NOPAT/IC
- **Return on equity (ROE)** = EAT/owners' equity

Multiplying Models:

- **Return on equity (ROE)** = ROIC_{BT} x Financial multiplier x Tax effect
- **ROIC_{BT}** = Operating margin x IC turnover = EBIT/Sales x Sales/IC
- **Financial multiplier** = Invested capital /owner's equity x EBT/EBIT
- **Tax effect** = EAT/EBT

$$\text{Earnings per share (EPS)} = \frac{\text{Earnings after tax}}{\text{Number of shares outstanding}}$$

$$\text{Price-to-earnings ratio (P/E)} = \frac{\text{Share price}}{\text{Earnings per share}}$$

$$\text{Market-to-book ratio} = \frac{\text{Share price}}{\text{Book value per share}}$$

Value creation and Self-sustainable growth (g*)

- **EVA** = NOPAT – WACC x IC or **EVA** = (ROIC_{AT} – WACC) x IC

$$\text{WACC} = K_d \times (1 - \text{Tax rate}) \times \% \text{ of debt} + K_e \times \% \text{ of equity}$$

- **g*** = Retention rate x ROE