| | *Positive* | *Negative* |
|---|---|---|
| Corporation | *-limited liability*<br>*-easy to raise large amounts of funds*<br>*-easy to transfer ownership*<br>*-perpetual life* | *-costly to start*<br>*-double taxation*<br>*-may face agency problems* |
| Sole Proprietorship | *-easy to start*<br>*-single taxation*<br>*-control of the company resides with the owner* | *-hard to transfer ownership*<br>*-unlimited liability*<br>*-limited life* |

Agency Problem: The agent may not fully represent the principal and act on a conflict of interest.

**I. Short-Term Solvency, or Liquidity, Ratios**

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

$$\text{Quick ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$$

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

**II. Long-Term Solvency, or Financial Leverage, Ratios**

$$\text{Total debt ratio} = \frac{\text{Total assets} - \text{Total equity}}{\text{Total assets}}$$

Debt–equity ratio = Total debt/Total equity

Equity multiplier = Total assets/Total equity

$$\text{Times interest earned ratio} = \frac{\text{EBIT}}{\text{Interest}}$$

$$\text{Cash coverage ratio} = \frac{\text{EBITDA}}{\text{Interest}}$$

**III. Asset Utilization, or Turnover, Ratios**

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

$$\text{Days' sales in inventory} = \frac{365 \text{ days}}{\text{Inventory turnover}}$$

$$\text{Receivables turnover} = \frac{\text{Sales}}{\text{Accounts receivable}}$$

$$\text{Days' sales in receivables} = \frac{365 \text{ days}}{\text{Receivables turnover}}$$

$$\text{Total asset turnover} = \frac{\text{Sales}}{\text{Total assets}}$$

$$\text{Capital intensity} = \frac{\text{Total assets}}{\text{Sales}}$$

**IV. Profitability Ratios**

$$\text{Profit margin} = \frac{\text{Net income}}{\text{Sales}}$$

$$\text{Return on assets (ROA)} = \frac{\text{Net income}}{\text{Total assets}}$$

$$\text{Return on equity (ROE)} = \frac{\text{Net income}}{\text{Total equity}}$$

$$\text{ROE} = \frac{\text{Net income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

**V. Market Value Ratios**

$$\text{Price–earnings ratio} = \frac{\text{Price per share}}{\text{Earnings per share}}$$

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

$$\text{EV multiple} = \frac{\text{Enterprise value}}{\text{EBITDA}}$$

NWC:Positive NWC means the company can cover its short term liabilities with liquid assets

Current ratio measures a company's ability to pay current liabilities with its current assets

EBIT=Revenue(Sales)-COGS-Operating Expenses= NI+Interest+Taxes, reflects company's profitability

Stock Buybacks: Aims:1. reduce the number of outstanding shares on the market, increasing the shareholder value 2.improve financial ratios: increase EPS, ROA, ROE as there is less assets and outstanding equity; invest in company itself when there are no better investment options.

When: P/E ratio is below industry standard

Does not have lucrative investment opportunities

cash ratio above industry standards

Days' Sales in inventory

Reason for going up: Demand for the company's product goes down; Industry in which the firm operates is going through a structural change

Economy is slowing down / Recession

Sustainable Growth: Rate = Retention Ratio * ROE or ROA*b / (1 - ROA * b)

Internal Growth rate=Retention ratio*ROA

Increase ROE or decrease COGS can increase SGR

EFN=Sales/Assets * ∂Sales - Spontaneous Liabilities/Sales * ∂Sales - PM*Projected Sales * (1-d)

low D/E: less likely suffer from long term solvency issues, need not allocate most resources for cost of borrowing. May missing potential to grow at higher rate

**Income Statement**

| | | |
|---|---|---|
| Sales | | $500 |
| Costs | | 400 |
| Taxable income | | $100 |
| Taxes (34%) | | 34 |
| Net income | | $ 66 |
| Dividends | $22 | |
| Addition to retained earnings | 44 | |

**ROSENGARTEN CORPORATION**
**Balance Sheet**

| Assets | $ | Percentage of Sales | Liabilities and Owners' Equity | $ | Percentage of Sales |
|---|---|---|---|---|---|
| Current assets | | | Current liabilities | | |
| Cash | $ 160 | 16% | Accounts payable | $ 300 | 30% |
| Accounts receivable | 440 | 44 | Notes payable | 100 | n/a |
| Inventory | 600 | 60 | Total | $ 400 | n/a |
| Total | $1,200 | 120 | Long-term debt | $ 800 | n/a |
| Fixed assets | | | Owners' equity | | |
| Net plant and equipment | $1,800 | 180 | Common stock and paid-in surplus | $ 800 | n/a |
| | | | Retained earnings | 1,000 | n/a |
| | | | Total | $1,800 | n/a |
| Total assets | $3,000 | 300% | Total liabilities and owners' equity | $3,000 | n/a |

DuPont: ROE

Profit margin: Operating Efficiency; sell more products/raise product price/reduce COGS

TAT: Asset use efficiency

Equity Multiplier: Financial Leverage, increase leads to higher debt and interest payment. Preferable when interest rate is low

ROA: how effectively the company can make use of its assets to get maximum profit. low ROA indicates that the company is not able to make maximum use of its assets for getting more profits. low ROA high PM indicates low Assets turnover

Inventory 2,000
Accounts Receivable 6,500
Office Building 10,000
Common Stock 5,000
Cash 5,000
Short term Loans 4,000
Owed to supplier 2,500
Machines 3,000
Bonds 12,000
Intangible Assets 5,000
Retained Earnings ?
Deferred Taxes 1,000

***Assets:***
*Current Assets:*
*Cash: 5,000*
*Accounts Receivables: 6,500*
*Inventory: 2,000*
*Total Current Assets: 13,500*

*Property Plant and Equipment: 13,000*
*Intangible Assets: 5,000*
*Net Assets: 31,500*

***Liabilities:***
*Current Liabilities:*
*Accounts Payable: 2,500*
*Short Term Debt: 4,000*
*Total Current Liabilities: 6,500*
*Longterm*
*Debt: 12,000*
*Deferred Taxes 1,000*
*Net Liabilities: 19,500*
*Equity:*
*Common Stock: 5,000*
*Retained Earnings: 7,000*
*Net Equity: 12,000*

Pros and Cons of Going Public

Pros: Obtain money that does not have to be repaid; Increased visibility; Market valuation

Cons: Going public is costly; Management loses some of its freedom to act without board approval; Open to scrutiny; Public reporting; Company may be taken over

Goodwill: the excess purchase price of another company based on its proprietary or intellectual property, brand recognition, patents

Goodwill increases its value, as qualities such as the company's customer base, its brands, products, location, workforce, and reputation demonstrate the company's proven track record of generating income.

Stock price:reflects a company's financial health; reflects investor perception of its ability to earn and grow its profits in the future

high stock price: management would likely remain/increases in compensation; receive more favorable press from analysts; prevention of takeover

Positive EBIT Negative NI:company may experience depreciation; accrual expense: company records an expense for purchasing an asset, but does not have to pay for it until the next period. Expenses are recorded at the time they are incurred, not when they're paid

| | |
|---|---|
| Assets: | |
| Current Assets | |
| ... Cash | 8,000 |
| .. Accounts Receivables | 8,500 |
| . Inventory | 3,000 |
| Total Current Assets | 19,500 |
| Fixed Assets | 12,000 |
| Total Assets | 31,500 |
| | |
| Liabilities: | |
| Current Liabilities | |
| .. Accounts Payable | 4,500 |
| .. Short Term Debt (Notes Payable) | *3,000* |
| Total Current Liabilities | 7,500 |
| Long Term Debt | 14,000 |
| Total Liabilities | 21,500 |
| Equity: | |
| Retained Earnings | *3,388+1,612 = 5,000* |
| Common Stock | 5,000 |
| Total Liab&Equity | 31,500 |

| | |
|---|---|
| Revenue | 13,000 |
| Cost | (7,000) |
| Gross Profit | 6,000 |
| Depreciation | (1,500) |
| EBIT | 4,500 |
| Interest | 1,400 |
| Pre–Tax Income | 3,100 |
| Tax (35%) | 1,085 |
| Net Income | 2,015 |
| Add to Ret. Earnings (80%) | 1,612 |
| Dividends (20%) | 403 |

| | | | |
|---|---|---|---|
| Inventory | 3,000 | Revenue | 13,000 |
| Fixed Assets | 12,000 | Cost | 7,000 |
| Cash | 8,000 | Depreciation | 1,500 |
| Acct. Pay. | 4,500 | Interest | 1,400 |
| Long–term Debt | 14,000 | Tax (%) | 35% |
| Acct. Rec. | 8,500 | Retention Ratio (%) | 80% |
| Common Stock | 5,000 | Ret. Earnings 2015 | 3,388 |

3. A firm has days' sales in inventory of 105 days, an average collection period of 35 days, and takes 42 days, on average, to pay its accounts payable. Taken together, what do these three figures imply about the firm's operations and its cash flows?

*It takes, on average, 105 days to sell inventory once it is purchased by the firm, then it takes another 35 days to collect on the receivables. Thus, the firm must finance the inventory and receivables for 140 days. The first 42 days are financed with payables, on average, leaving 98 days worth of inventory and receivables that it must finance using other sources. In terms of cash flow, the average cash outflow occurs 42 days after inventory is purchased while the average cash inflow occurs 98 days later, which is 140 days after the inventory is purchased by the firm.*

| | |
|---|---|
| Market Value Measures | Market Capitalization = Price per share * # Shares Outstanding<br>P/E Ratio = Price Per Share / Earnings Per Share |
| Accounting Ratios | Current Ratio = Current Assets/ Current Liabilities<br>Quick Ratio = (Current Assets – Inventory) / Current Liabilities<br>Cash Ratio = Cash / Current Liabilities<br>Total Debt Ratio = (Total Assets – Total Equity ) / Total Assets<br>Debt/Equity = Total Debt / Total Equities<br>Equity Multiplier = Total Assets / Total Equity<br>Times Interest Earned = (Earnings Before Interest And Taxes) / Interest<br>Cash Coverage = (EBIT + Depreciation + Amortization) / Interest<br>Inventory Turnover = Cost of Goods Sold / Inventory<br>Days' Sales in Inventory = 365 / (Inventory Turnover)<br>Receivables Turnover = Sales / Accounts Receivable<br>Days' Sales in Receivables = 365 / Receivables Turnover<br>Total Asset Turnover = Sales /Total Assets<br>Profit Margin = Net Income / Sales<br>Return on Assets = Net Income / Total Assets<br>Return on Equity = Net Income / Total Equity<br>EBITDA Margin = EBITDA / Sales<br>Capital Intensity = Total Assets / Sales |
| Financial Cash Flow | C(A)=C(B)+C(S)<br><br>C(A) =OCF- Change in NWC – Cash Flow to Fixed Assets<br>OCF=EBIT+Depreciation-Tax<br>Change in NWC = Ending NWC – Beginning NWC<br>Cash Flow to Fixed Assets = Ending NFA-Beginning NFA+Depreciation (if we use the gross fixed assets, then = Ending Gross Fixed Assets – Beginning Gross Fixed Assets)<br><br>C(B) = Interest-(Ending Long Term Debt – Beginning Long Term Debt)<br>C(S) = Dividends – (Stocks sold- Stocks purchased) |

Value Company: Mature company whose growth level stablized and ceased to grow ;higher rates than peers

Growth company: companies that have demonstrated better-than-average gains in earnings in recent years and expected to continue delivering high profit growth