

Chapters 3 - 4

Financial Statements, Cash Flow, and Analysis of Financial Statements

Balance Sheet

Assets	Liabilities and Shareholder's Equity
Cash	Accounts Payable
Inventory	Notes Payable
A/R	Accrued Wages
Property	Bank Loans
Plant	Bonds
Equipment	Common Stock
	Retained Earnings
Total Assets	Total Liabilities and S/E

Income Statement

Sales	revenues
(-) Cost of Goods Sold	cost to manufacture product
(-) Operating Expenses	general expenses
(-) Depreciation	expensing fixed assets
EBIT	earnings before int. and taxes
(-) Interest	to bondholders
EBT	earnings before taxes
(-) Taxes	rate set by government
Net Income	payout or retain
(-) Dividends	payout
Additions to R/E	retain

Statement of Cash Flows

Cash Flow from Operations:

- Net income (I/S)
- + depreciation (I/S)
- increases in current assets (B/S)
- + increases in current liabilities (B/S)

Cash Flow from Investments:

- investments in PPE (B/S)
- + sale of assets (B/S)

Cash Flow from Financing:

- + proceeds from issues of common stock or debt (B/S)
- payment of dividends (I/S)
- repurchase of common stock (B/S)
- repayment of debt (B/S)

Net increase/decrease in Cash Account

Cash Flow

Earnings before Interest, Taxes, Depreciation, and Amortization (EBITDA)

Cash Flow available to bondholders, to pay government, and to fund asset purchase.
Adds back in noncash items.

Free Cash Flow (FCF)

Free Cash Flow (FCF) = NOPAT - Net Inv in oper capital

Net Operating Profit after Taxes = $EBIT(1 - \text{tax rate})$

Net investment in operating capital = - change in current assets (operating) + change in current liabilities (operating) - change in net capital assets

Current asset increase represents an investment

Current liability increase represents borrowing

Net capital assets = Increase in PPE - Depreciation

Financial Ratio Analysis

Five major areas to analyze

- (1) Liquidity Position
- (2) Management of Assets
- (3) Management of Debt
- (4) Company's Profitability
- (5) Market's View of Company

Liquidity Ratios

Use to investigate the relationship between a firm's current (short-term) assets and current (short-term) liabilities

Liquidity Ratios

(a) Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

higher the better

(b) Quick Ratio = $\frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$

higher the better

Asset Management Ratios

Use to evaluate how efficiently management employs assets

Asset Management Ratios

(a) Inventory Turnover = $\frac{\text{Sales}}{\text{Inventory}}$

higher the better

Inventory Turnover = $\frac{\text{Cost of Goods Sold}}{\text{Inventory}}$

(b) Days Sales Outstanding = $\frac{\text{Accounts Receivable}}{\text{Credit Sales/day}}$

lower the better

Asset Management Ratios

(c) Fixed Asset Turnover = $\frac{\text{Net Sales}}{\text{Net Fixed Assets}}$

higher the better

(d) Total Asset Turnover = $\frac{\text{Net Sales}}{\text{Total Assets}}$

higher the better

Debt Management Ratios

Use to evaluate riskiness of a company

Higher risk equates to higher required return

Debt Management Ratios

$$(a) \text{ Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

lower = less risk

$$(b) \text{ Times-Interest-Earned (TIE)} = \frac{\text{EBIT}}{\text{Interest}}$$

higher the better

Profitability Ratios

Are the owner's earning an adequate return on their investment

Profitability Ratios

$$(a) \text{ Profit Margin} = \frac{\text{Net Income}}{\text{Net Sales}}$$

higher the better

$$(b) \text{ Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Total Assets}}$$

higher the better

$$(c) \text{ Return on Equity (ROE)} = \frac{\text{Net Income}}{\text{Owner's Equity}}$$

higher the better

Market Value Ratios

Use to determine how the market views the company

Market Value Ratios

$$(a) \text{ PE Ratio} = \frac{\text{Price per share}}{\text{EPS}}$$

higher the better

$$(b) \text{ PEG Ratio} = \frac{\text{PE Ratio}}{e(\text{gEPS})}$$

expected to equal one

$$(c) \text{ Market to Book Ratio} = \frac{\text{Price}}{\text{Book Value}}$$

higher the better

DuPont Analysis

The DuPont equation provides us a method to evaluate the components that make up ROE.

$$\text{ROE} = \frac{\text{Net Income}}{\text{Owner's Equity}}$$

DuPont Analysis

$$\text{ROE} = (\text{ROA}) * (\text{Equity Multiplier})$$

$$\text{remember: ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$$

$$\text{Equity Multiplier} = \frac{\text{Total Assets}}{\text{Common Equity}}$$

- Shows the asset base supported by common equity
- A high equity multiplier shows a lot of risk or may be due to low market value relative to book value

DuPont Analysis

$$\text{ROE} = (\text{ROA}) * (\text{Equity Multiplier})$$

$$\text{ROE} = \frac{\text{Net Income}}{\text{Total Assets}} * \frac{\text{Total Assets}}{\text{Common Equity}}$$

DuPont Analysis

$$\text{ROA} = (\text{profit margin}) * (\text{total asset turnover})$$

where:

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Net Sales}}$$

$$\text{Total Asset Turnover} = \frac{\text{Net Sales}}{\text{Total Assets}}$$

Extended DuPont Analysis

May be most beneficial to use as analysis tool.

$$\text{ROE} = \text{PROFIT MARGIN} \times \text{TOTAL ASSET} \times \text{EQUITY MULTIPLIER TURNOVER}$$

$$\text{ROE} = \frac{\text{Net Profit}}{\text{Net Sales}} \times \frac{\text{Net Sales}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Common Equity}}$$

ROE is separated into profitability of each \$ of sales (profit margin), efficiency of asset management (total asset turnover), and company risk (equity multiplier)

Can now get insight into whether company's return is due to high profitability, good management, or compensation for risk

Keys to using Ratio Analysis

- (1) Compare ratios to industry
- (2) Look at trend of ratios over time
- (3) Be aware of the limitations in using ratio analysis

Limitations to Ratio Analysis

- (1) Difficult to fit conglomerate into specific industry - or company make-up may change over time
- (2) Focus on some 'important' ratios may adversely effect overall firm performance
- (3) Timing of cash flows affect balances in accounts
- (4) Window Dressing Techniques - make ratios appear better than they are to improve appearance of the company (fool investors)

Limitations to Ratio Analysis

- (5) Different Accounting Methods
- (6) No absolutes - high/low does not always mean good/bad or bad/good
- (7) Industry averages may be distorted if all company's in industry very good or very bad