Chapters 3 - 4

Financial Statements, Cash Flow, and Analysis of Financial Statements

**Balance Sheet**

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities and Shareholder's Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>Accounts Payable</td>
</tr>
<tr>
<td>Inventory</td>
<td>Notes Payable</td>
</tr>
<tr>
<td>A/R</td>
<td>Accrued Wages</td>
</tr>
<tr>
<td>Property</td>
<td>Bank Loans</td>
</tr>
<tr>
<td>Plant</td>
<td>Bonds</td>
</tr>
<tr>
<td>Equipment</td>
<td>Common Stock</td>
</tr>
<tr>
<td></td>
<td>Retained Earnings</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td><strong>Total Liabilities and S/E</strong></td>
</tr>
</tbody>
</table>

**Income Statement**

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

**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-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

(a) Inventory Turnover = \( \frac{\text{Sales}}{\text{Inventory}} \) higher the better

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

(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

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

lower = less risk

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

higher the better

Profitability Ratios

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

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

higher the better

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

higher the better

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

higher the better
Market Value Ratios

Use to determine how the market views the company

(a) PE Ratio = \( \frac{\text{Price per share}}{\text{EPS}} \)
higher the better

(b) PEG Ratio = \( \frac{\text{PE Ratio}}{\text{gEPS}} \)
expected to equal one

(c) 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

\[ \text{ROE} = (\text{ROA})^* (\text{Equity Multiplier}) \]

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

\[ \text{Equity Multiplier} = \frac{\text{Total Assets}}{\text{Common Equity}} \]

• 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

\[ \text{ROE} = (\text{ROA}) \times (\text{Equity Multiplier}) \]

\[ \text{ROE} = \frac{\text{Net Income}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Common Equity}} \]

Extended DuPont Analysis

May be most beneficial to use as analysis tool.

\[ \text{ROE} = \frac{\text{Profit Margin}}{\text{Total Asset Turnover}} \times \frac{\text{Net Sales}}{\text{Total Assets}} \]

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

DuPont Analysis

\[ \text{ROA} = (\text{profit margin}) \times (\text{total asset turnover}) \]

where:

\[ \text{Profit Margin} = \frac{\text{Net Income}}{\text{Net Sales}} \]

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

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)

(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