Chapter 3  
Working With Financial Statements

Standardized Financial Statements
• Common-Size Balance Sheets
  – Compute all accounts as a percent of total assets
• Common-Size Income Statements
  – Compute all line items as a percent of sales
• Standardized statements make it easier to compare financial information, particularly as the company grows
• They are also useful for comparing companies of different sizes, particularly within the same industry

Ratio Analysis
• Ratios also allow for better comparison through time or between companies
• As we look at each ratio, ask yourself what the ratio is trying to measure and why that information is important
• Ratios are used both internally and externally

Categories of Financial Ratios
• Short-term solvency or liquidity ratios
• Long-term solvency or financial leverage ratios
• Asset management or turnover ratios
• Profitability ratios
• Market value ratios

Liquidity Ratios
• Current Ratio = CA / CL
• Quick Ratio = (CA – Inventory) / CL
• Cash Ratio = Cash / CL
• These ratios measure a firm’s ability to pay its bills over the short run without undue stress. These ratios focus on current assets and current liabilities.

Leverage Ratios
• Total Debt Ratio = (TA – TE) / TA
• Debt/Equity = TD / TE
• Equity Multiplier = TA / TE = 1 + D/E
• These ratios measure the financial leverage of companies.
Coverage Ratios

- Times Interest Earned = \( \frac{EBIT}{Interest} \)
- Cash Coverage = \( \frac{EBIT + Depr. & Amort.}{Interest} \)

- These ratios measure a firm’s long-run ability to meet its obligations.

Inventory Ratios

- Inventory Turnover = \( \frac{Cost \ of \ Goods \ Sold}{Inventory} \)
- Days’ Sales in Inventory = \( \frac{365}{Inventory \ Turnover} \)

- These ratios measure efficiency.

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Receivables Ratios

- Receivables Turnover = \( \frac{Sales}{Accounts \ Receivable} \)
- Days’ Sales in Receivables = \( \frac{365}{Receivables \ Turnover} \)

Total Asset Turnover

- Total Asset Turnover = \( \frac{Sales}{Total \ Assets} \)

- Measure of asset use efficiency
- Not unusual for TAT < 1, especially if a firm has a large amount of fixed assets

Profitability Measures

- Profit Margin = \( \frac{Net \ Income}{Sales} \)
- Return on Assets (ROA) = \( \frac{Net \ Income}{Total \ Assets} \)
- Return on Equity (ROE) = \( \frac{Net \ Income}{Total \ Equity} \)

- These ratios measure how effective and efficiently the firm manages its operations.

Market Value Measures

- PE Ratio = \( \frac{Price \ per \ share}{Earnings \ per \ share} \)
- Market-to-book ratio = \( \frac{market \ value \ per \ share}{book \ value \ per \ share} \)
The Du Pont Equation

- The Du Pont equation breaks down ROE into its three basic components
  - Profit margin, total asset turnover and financial leverage
- If ROE is unsatisfactory by some measure, the Du Pont identity tells you where to begin looking for the reason why.

Deriving the Du Pont Identity

- ROE = NI / TE
- Multiply by 1 and then rearrange
  - ROE = (NI / TE) (TA / TA)
  - ROE = (NI / TA) (TA / TE) = ROA * EM
- Multiply by 1 again and then rearrange
  - ROE = (NI / TA) (TA / TE) (Sales / Sales)
  - ROE = (NI / Sales) (Sales / TA) (TA / TE)
  - ROE = PM * TAT * EM

Using the Du Pont Identity

- ROE = PM * TAT * EM
  - Profit margin is a measure of the firm’s operating efficiency – how well does it control costs
  - Total asset turnover is a measure of the firm’s asset use efficiency – how well does it manage its assets
  - Equity multiplier is a measure of the firm’s financial leverage

Payout and Retention Ratios

- Dividend payout ratio (“b”) = Cash dividends / Net income
- Retention ratio (“1 – b”)
- Net income = (EPS – DPS) / EPS
- Or: Retention ratio = 1 – Dividend Payout Ratio

The Internal Growth Rate

\[
\text{Internal Growth Rate} = \frac{\text{ROA} \times b}{1 - \text{ROA} \times b}
\]

- The internal growth rate tells us how much the firm can grow assets using retained earnings as the only source of financing.

The Sustainable Growth Rate

\[
\text{Sustainable Growth Rate} = \frac{\text{ROE} \times b}{1 - \text{ROE} \times b}
\]

- The sustainable growth rate tells us how much the firm can grow by using internally generated funds and issuing debt to maintain a constant debt ratio.
Determinants of Growth

- Profit margin – operating efficiency
- Total asset turnover – asset use efficiency
- Financial leverage – choice of optimal debt ratio
- Dividend policy – choice of how much to pay to shareholders versus reinvesting in the firm

Why Evaluate Financial Statements?

- Internal uses
  - Performance evaluation – compensation and comparison between divisions
  - Planning for the future – guide in estimating future cash flows
- External uses
  - Creditors
  - Suppliers
  - Customers
  - Stockholders

Benchmarking

- Ratios are not very helpful by themselves; they need to be compared to something
- Time-Trend Analysis
  - Used to see how the firm’s performance is changing through time
  - Internal and external uses
- Peer Group Analysis
  - Compare to similar companies or within industries
  - SIC and NAICS codes