CHAPTER 6
Financial Statement Analysis

Financial Statements & Reports
Financial Statements & Ratio Analysis
Modifying Data for Managerial Decisions

Annual report

- Annual reports inform investors about the current state of operations and lay out plans for the future.
- All U.S. public companies must issue annual reports.
- Many private companies issue annual reports, too.
- A written discussion section describes recent operating results and makes forward-looking statements about the firm.
- Financial statements outline the firm’s past financial performance.
  - Income statement
  - Balance sheet
  - Statement of cash flows
  - Statement of retained earnings

Income statement

- Reflects financial performance over a specified period of time (usually prepared monthly, quarterly, and annually).
- The income statement sums all inflows of assets (called revenues) during the period less the sum of all outflows of assets (called expenses) during the period.
- The income available to common shareholders is generally referred to as net income, or "the bottom line."
- For an MNE, subsidiaries prepare separate financial statements, which are consolidated at the firm level.

Consolidated income statement (in thousands of dollars)

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sales revenue</td>
<td>$1,003,137.0</td>
<td>$917,789.0</td>
</tr>
<tr>
<td>Total operating costs</td>
<td>- 887,177.0</td>
<td>- 817,718.0</td>
</tr>
<tr>
<td>EBITDA</td>
<td>$115,960.0</td>
<td>$100,071.0</td>
</tr>
<tr>
<td>Depr. &amp; amort. expense</td>
<td>- 25,063.0</td>
<td>- 21,951.0</td>
</tr>
<tr>
<td>EBIT</td>
<td>$90,897.0</td>
<td>$78,120.0</td>
</tr>
<tr>
<td>Interest expense</td>
<td>- 14,716.0</td>
<td>- 14,280.0</td>
</tr>
<tr>
<td>EBT</td>
<td>$76,181.0</td>
<td>$63,840.0</td>
</tr>
<tr>
<td>Taxes</td>
<td>- 30,472.4</td>
<td>- 25,536.0</td>
</tr>
<tr>
<td>Net income before pref. div.</td>
<td>$45,708.6</td>
<td>$38,304.0</td>
</tr>
<tr>
<td>Preferred dividends</td>
<td>- 3,600.0</td>
<td>- 3,600.0</td>
</tr>
<tr>
<td>Net income</td>
<td>$42,108.6</td>
<td>$34,704.0</td>
</tr>
</tbody>
</table>

Income statements

<table>
<thead>
<tr>
<th>Per share data:</th>
<th>2004</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common stock price</td>
<td>$21.00</td>
<td>$19.00</td>
</tr>
<tr>
<td>Earnings per share (EPS)</td>
<td>1.05</td>
<td>0.87</td>
</tr>
<tr>
<td>Dividends per share (DPS)</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Book value per share (BVPS)</td>
<td>8.31</td>
<td>7.25</td>
</tr>
<tr>
<td>Cash flow per share (CFPS)</td>
<td>1.68</td>
<td>1.42</td>
</tr>
</tbody>
</table>

- The firm has 40 million shares of common stock outstanding. From the firm’s income statements, we can calculate this information.

Balance sheet

- Represents a “snapshot” of the firm’s financial position at a specific point in time (in this case, the last day of 2003 and 2004).
- Balance sheet accounts change continuously as inventories are stocked or sold, as fixed assets are purchased or retired, and as bank loans are borrowed or repaid, but only the amounts in the various accounts as of the balance sheet dates are shown.
Balance sheet

- The assets section lists assets in order of "liquidity." Current assets (cash, A/R, inventories, and prepaid expenses) are followed by net fixed assets.
- The claims section lists liabilities and equity, which are claims against the assets, in the order they must be paid: A/P are usually paid off within 30 days, N/P within 90 days, etc. Stockholders' equity accounts represent ownership and need never be "paid off."

Consolidated balance sheet:

**Assets (in thousands of dollars)**

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash &amp; equivalents</td>
<td>$57,595.3</td>
<td>$50,825.1</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>122,255.2</td>
<td>107,609.7</td>
</tr>
<tr>
<td>Inventories</td>
<td>179,131.0</td>
<td>152,409.7</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total current assets</td>
<td>$358,681.5</td>
<td>$310,844.5</td>
</tr>
<tr>
<td>Net plant &amp; equipment</td>
<td>559,027.5</td>
<td>460,725.0</td>
</tr>
<tr>
<td>Total assets</td>
<td>$918,009.0</td>
<td>$771,569.5</td>
</tr>
</tbody>
</table>

**Claims (in thousands of dollars)**

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred stock</td>
<td>60,000.0</td>
<td>60,000.0</td>
</tr>
<tr>
<td>Common stock</td>
<td>79,500.0</td>
<td>79,500.0</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>252,758.6</td>
<td>210,656.0</td>
</tr>
<tr>
<td>Total common equity</td>
<td>$332,258.6</td>
<td>$290,150.0</td>
</tr>
<tr>
<td>Total liabilities and equity</td>
<td>$918,009.0</td>
<td>$771,569.5</td>
</tr>
</tbody>
</table>

Financial ratios

- Solvency and liquidity
- Assets management
- Debt management
- Profitability
- Market value

Solvency and liquidity ratios

- Answer the question: Will the firm be able to pay off its debts as they come due in the near future?
- Current ratio (CR)
  - Current assets
  - Current liabilities
- Quick ratio (QR)
  - Current assets – Inventories
  - Current liabilities

Asset management ratios

- Measure how effectively the firm manages its assets. Excessive (or under) investments in assets cause operating assets and capital to be unnecessarily high (low), leading to lower free cash flow and stock price.
- Therefore, it is important to invest the right amount in assets.
Asset management ratios

- Days inventory held (DIH)
  \[
  \text{Inventories} = \frac{\text{COGS}}{365}
  \]
- Days sales outstanding (DSO)
  \[
  \frac{\text{A/R}}{\text{Sales}} \times 365
  \]
- Total assets turnover (TATO)
  \[
  \frac{\text{Sales}}{\text{Total assets}}
  \]
- Fixed assets turnover (FATO)
  \[
  \frac{\text{Sales}}{\text{Fixed assets}}
  \]

Debt management ratios

- Measure the extent to which a firm uses debt financing, or financial leverage.
- Important for three reasons:
  - By raising debt funds, stockholders maintain control without increasing their investment.
  - If the firm earns more on investments than it pays in interest, shareholder returns are magnified, or "leveraged," but risk is also magnified.
  - Creditors look to the equity to provide a margin of safety, so the less debt used, the less risk creditors face.

Debt management ratios

- Debt ratio (DR)
  \[
  \frac{\text{Total debt}}{\text{Total assets}}
  \]
- Times-interest-earned (TIE)
  \[
  \frac{\text{EBIT}}{\text{Interest expense}}
  \]
- Days payables outstanding (DPO)
  \[
  \frac{\text{A/P}}{\text{COGS}} \times 365
  \]
- Cash conversion period (CCP)
  \[
  \frac{\text{DIH} + \text{DSO} - \text{DPO}}{\text{Sales}}
  \]

Profitability ratios

- Show the combined effects of liquidity, assets management, and debt on operating results.
- Basic earning power (BEP)
  \[
  \frac{\text{EBIT}}{\text{Total assets}}
  \]
- Profit margin (PM)
  \[
  \frac{\text{NI}}{\text{Sales}}
  \]
- Return on total assets (ROA)
  \[
  \frac{\text{Net income}}{\text{Total assets}}
  \]
- Return on common equity (ROE)
  \[
  \frac{\text{Net income}}{\text{Common equity}}
  \]

Market value ratios

- Relate the firm's stock price to its earnings, cash flow, and book value per share.
- Give management an indication of investors' perceptions of the company's past performance and future prospects.
- If the liquidity, assets management, debt management, and profitability ratios all look good, then the stock price and market value ratios will likely be high.

Market value ratios

- Price-to-earnings (P/E)
  \[
  \frac{\text{Stock price}}{\text{EPS}}
  \]
- Price-to-cash flow (P/CF)
  \[
  \frac{\text{Stock price}}{\text{CFPS}}
  \]
- Market-to-book (M/B)
  \[
  \frac{\text{Stock price}}{\text{BVPS}}
  \]
Ratio analysis

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2003</th>
<th>Ind Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td>1.99x</td>
<td>2.10x</td>
<td>2.30x</td>
</tr>
<tr>
<td>Quick ratio</td>
<td>1.00x</td>
<td>1.07x</td>
<td>1.70x</td>
</tr>
<tr>
<td>Days inventory held</td>
<td>98.96</td>
<td>89.96</td>
<td>58.00</td>
</tr>
<tr>
<td>Days sales outstanding</td>
<td>44.48</td>
<td>42.80</td>
<td>41.00</td>
</tr>
<tr>
<td>Fixed assets turnover</td>
<td>1.70x</td>
<td>1.99x</td>
<td>1.90x</td>
</tr>
<tr>
<td>Total assets turnover</td>
<td>1.09x</td>
<td>1.19x</td>
<td>1.40x</td>
</tr>
<tr>
<td>Total debt ratio</td>
<td>57.27%</td>
<td>54.62%</td>
<td>56.00%</td>
</tr>
<tr>
<td>Times interest earned</td>
<td>6.18x</td>
<td>5.47x</td>
<td>5.10x</td>
</tr>
<tr>
<td>EBITDA coverage</td>
<td>7.80x</td>
<td>7.00x</td>
<td>7.20x</td>
</tr>
<tr>
<td>Days payables outstanding</td>
<td>51.58</td>
<td>48.66</td>
<td>43.00</td>
</tr>
<tr>
<td>Cash conversion period</td>
<td>91.9</td>
<td>84.1</td>
<td>56.00</td>
</tr>
</tbody>
</table>

Ratio analysis

- Gives an objective appraisal of the firm’s financial statements.
- Otherwise, comparison of financial statements falls victim to scale differences.
  - Small companies and large companies cannot be compared because their financial statement accounts would be wildly different.
  - With ratios, we can more easily make comparisons between the target firm and competitors.

Problems with ratio analysis

- Dealing with conglomerates
- Window dressing
- Different accounting practices
- Not always clear what is “good” and “bad”
- Requires honest and accurate statements

Qualitative factors to be considered

- Are revenues or costs tied to one key customer or supplier?
- To what extent are revenues tied to one key product?
- What percentage of business is generated in other countries?
- What role do new and existing competitors play in the firm’s future?
- Is there enough investment in research and development to ensure good future prospects?
- How do different legal and regulatory environments affect the firm’s decision-making process?

Assets and capital

- Operating assets
  - Operating current assets
- Nonoperating assets
- Operating current liabilities
- Net operating working capital
- Total net operating capital
NOWC and total net operating capital

\[
\text{NOWC}_{2004} = \text{Operating CA} - \text{Operating CL} \\
\text{NOWC}_{2004} = $358,981.5 - $105,179.0 \\
\text{NOWC}_{2004} = $253,802.5 \\
\text{NOWC}_{2003} = $217,825.2
\]

\[
\text{TNOC}_{2004} = \text{NOWC} + \text{Operating LT assets} \\
\text{TNOC}_{2004} = $253,802.5 + $559,027.5 \\
\text{TNOC}_{2004} = $812,830.0 \\
\text{TNOC}_{2003} = $678,550.2
\]

NOPAT

- The amount of profit the firm would generate if it held no debt and no financial assets

\[
\text{NOPAT}_{2004} = \text{EBIT} (1 - T) \\
\text{NOPAT}_{2004} = $90,897 (1 - 0.4) \\
\text{NOPAT}_{2004} = $54,538.2 \\
\text{NOPAT}_{2003} = $46,872.0
\]

Cash flow measures

- Net cash flow (NCF)
  \[
  \text{NCF}_{2004} = \text{NI} + \text{Depr exp} \\
  \text{NCF}_{2004} = $42,108.6 + $25,063.0 = $67,171.6 \\
  \text{NCF}_{2003} = $56,655.0
  \]

- Free cash flow (FCF)
  \[
  \text{FCF}_{2004} = \text{NOPAT} - \text{Net cap. investment} \\
  \text{FCF}_{2004} = $54,538.2 - $134,279.8 = -$79,741.6
  \]

Uses of FCF

- Pay interest to debtholders
- Repay debtholders
- Pay dividends to shareholders
- Repurchase stock from shareholders
- Buy marketable securities or other nonoperating assets

Value added

- Economic value added (EVA)
  - Value added to shareholders by management during a given year.
- Market value added (MVA)
  - Difference between the firm’s market capitalization and the amount of investor-supplied equity capital.

Calculating EVA and MVA

\[
\text{MVA}_{2004} = \text{Market cap.} - \text{BV of common equity} \\
\text{MVA}_{2004} = ($21 \times 40,000) - $332,258.6 \\
\text{MVA}_{2004} = $507,741.4
\]

\[
\text{MVA}_{2003} = $469,850.0
\]

\[
\text{EVA}_{2004} = \text{NOPAT} - \text{Operating capital} \times \text{WACC} \\
\text{EVA}_{2004} = $54,538.2 - ($812,830 \times 0.085) \\
\text{EVA}_{2004} = -$14,552.3
\]

\[
\text{EVA}_{2003} = -$10,804.8
\]