Chapter 8: Prospective Analysis: Valuation Implementation
Key Concepts in Chapter 8

Two key issues must be addressed to implement valuation theory:

1. Determining the appropriate discount rate to use in valuation models

2. Making forecasts of financial performance
   - Detailed forecasts over a number of years
   - Arriving at a forecasted terminal value
Computing a Discount Rate

• The appropriate discount rate is the WACC, which takes into account debt and equity sources of financing

\[ \text{WACC} = \% \text{ debt financing}^1 \times \text{After-tax cost of debt} + \% \text{ equity financing} \times \text{Cost of equity capital} \]

^1 Short- and long-term debts, not all liabilities
Estimating the Costs of Debt and Equity

• Cost of debt:
  – Should reflect the current interest rate(s)
  – Must be net of taxes because after-tax cash flows are being discounted

• Cost of equity:
  – A complex topic
  – The CAPM provides one approach
  – CAPM may be combined with firm size
  – Amount of leverage affects risk
Estimating TJX’s Cost of Equity

• Assumptions:
  – Beta is 0.80
  – Treasury bond rate is 3.4%
  – Market risk premium 6.7%

• Cost of equity = 8.8% (3.4% + (0.8*6.7%))
Detailed Forecasts of Performance

• Assumptions underlying the forecasts are all-important.
  – Strategy analysis is critical to determine if current performance is sustainable
  – Accounting analysis helps understand:
    • A company’s current performance, as reported
    • The reliability of reported information used in forecasts

• Typically, selected financial statement line items are forecasted instead of complete financials.
  – See Tables 8-3 and 8-4 in the text.
## Performance Forecasts for TJX

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity Valuation</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Abnormal earnings</td>
<td>1,413.9</td>
<td>1,396.0</td>
<td>1,385.7</td>
<td>1,364.3</td>
<td>1,330.9</td>
<td>1,284.5</td>
<td>1,224.1</td>
<td>1,112.6</td>
<td>981.1</td>
<td>828.6</td>
</tr>
<tr>
<td>Abnormal ROE</td>
<td>42.1%</td>
<td>38.0%</td>
<td>34.9%</td>
<td>31.9%</td>
<td>29.0%</td>
<td>26.1%</td>
<td>23.2%</td>
<td>19.8%</td>
<td>16.4%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Free cash flow to equity</td>
<td>1,387.6</td>
<td>1,429.3</td>
<td>1,429.8</td>
<td>1,420.6</td>
<td>1,400.9</td>
<td>1,369.8</td>
<td>1,326.3</td>
<td>1,233.3</td>
<td>1,122.2</td>
<td>1,024.7</td>
</tr>
<tr>
<td>Equity discount factor</td>
<td>0.92</td>
<td>0.85</td>
<td>0.78</td>
<td>0.71</td>
<td>0.66</td>
<td>0.60</td>
<td>0.56</td>
<td>0.51</td>
<td>0.47</td>
<td>0.43</td>
</tr>
<tr>
<td>Equity growth factor</td>
<td>1.00</td>
<td>1.10</td>
<td>1.18</td>
<td>1.27</td>
<td>1.37</td>
<td>1.47</td>
<td>1.57</td>
<td>1.68</td>
<td>1.79</td>
<td>1.90</td>
</tr>
</tbody>
</table>

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Terminal Values

• The **terminal value** is the final year of the forecast and represents the PV of future of abnormal earnings or free cash flows for the remainder of the firm’s life.

• Forecasting issues:
  – Assumptions about sales growth beyond the terminal year may be irrelevant because of competitive equilibrium.
  – Alternatively, abnormal earnings on incremental sales may be assumed.
Terminal Values

• Forecasting issues, continued:
  – Terminal values may be forecasted with growth in abnormal earnings and cash flows at a constant rate.
  – A price multiple may be used to calculate terminal value
  – Selecting the terminal year: five- to ten-year forecast horizon should suffice for most firms
Calculating the Terminal Value for TJX

### Table 8-4: Terminal Values Under Various Assumptions (Using Abnormal Earnings Methodology)

<table>
<thead>
<tr>
<th>Approach</th>
<th>Scenario</th>
<th>Terminal Sales Growth</th>
<th>Terminal NOPAT Margins</th>
<th>Value Beyond Forecast Horizon ($ in billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistent Abnormal Performance</td>
<td>Sales growth and margins based on detailed analysis and forecast</td>
<td>5.7%</td>
<td>4.0%</td>
<td>12.3</td>
</tr>
<tr>
<td>Abnormal Returns on Constant Sales (Real Terms)</td>
<td>Sales grow at the rate of inflation, margins maintained</td>
<td>3.0%</td>
<td>4.0%</td>
<td>6.4</td>
</tr>
<tr>
<td>Abnormal Returns on Constant Sales (Nominal Terms)</td>
<td>Essentially zero sales growth, margins maintained</td>
<td>0.0%</td>
<td>4.0%</td>
<td>4.1</td>
</tr>
<tr>
<td>Competitive Equilibrium</td>
<td>Margins reduced so no abnormal earnings</td>
<td>5.7%</td>
<td>2.0%</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Source: © Cengage Learning 2013
# Computing Asset and Equity Values: TJX Example

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Performance</th>
<th>Value from Forecasts for 2011–2020</th>
<th>Value from Beyond 2020 (Terminal Value)</th>
<th>Total Value</th>
<th>Value per Share ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1 – Persistent Abnormal Performance</td>
<td>Abnormal Earnings</td>
<td>$3,357.1</td>
<td>$8,246.7</td>
<td>$12,308.0</td>
<td>$23,911.8</td>
</tr>
<tr>
<td>Scenario 2 – Abnormal Returns on Constant Sales (Real Terms)</td>
<td>Abnormal Earnings</td>
<td>$3,357.1</td>
<td>$8,246.7</td>
<td>$6,381.3</td>
<td>$17,985.1</td>
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<tr>
<td>Scenario 3 – Abnormal Returns on Constant Sales (Nominal Terms)</td>
<td>Abnormal Earnings</td>
<td>$3,357.1</td>
<td>$8,246.7</td>
<td>$4,076.1</td>
<td>$15,680.0</td>
</tr>
<tr>
<td>Scenario 4 – Competitive Equilibrium</td>
<td>Abnormal Earnings</td>
<td>$3,357.1</td>
<td>$8,246.7</td>
<td>$0.0</td>
<td>$11,603.8</td>
</tr>
</tbody>
</table>

1 Shares of TJX outstanding used in the calculation of equity per share 389.7 million per Thomson ONE database, accessed July, 2011.

Source: © Cengage Learning 2013
Other Issues Related to Value Estimates

• It is useful to check assumptions used against the time series trends for a company’s performance ratios.

• Stock prices of publicly traded companies are good to compare estimates of value with.

• Sensitivity analysis for different economic scenarios are a good idea to conduct.
Some Practical Issues in Valuation

In practice, analysts must deal with a number of issues having an important effect on valuation, including:

- **Accounting distortions.** Accounting choices, though self-correcting, affect both earnings and book value.

- **Negative book values.** Start-up firms and firms in certain industrial sectors, among others, may have negative book equity.

- **Excessive cash balances and cash flows.** Firms with cash beyond the level required to finance operations warrant further investigation to understand whether the excess cash indicates governance problems.
Concluding Comments

- This chapter applies valuation theory discussed in Chapter 7 along with the forecasts addressed in Chapter 6.

- The TJX example provides insights into the challenges posed in the valuation process.

- Strategic and accounting analyses are critical to arriving at the assumptions that drive value estimates.