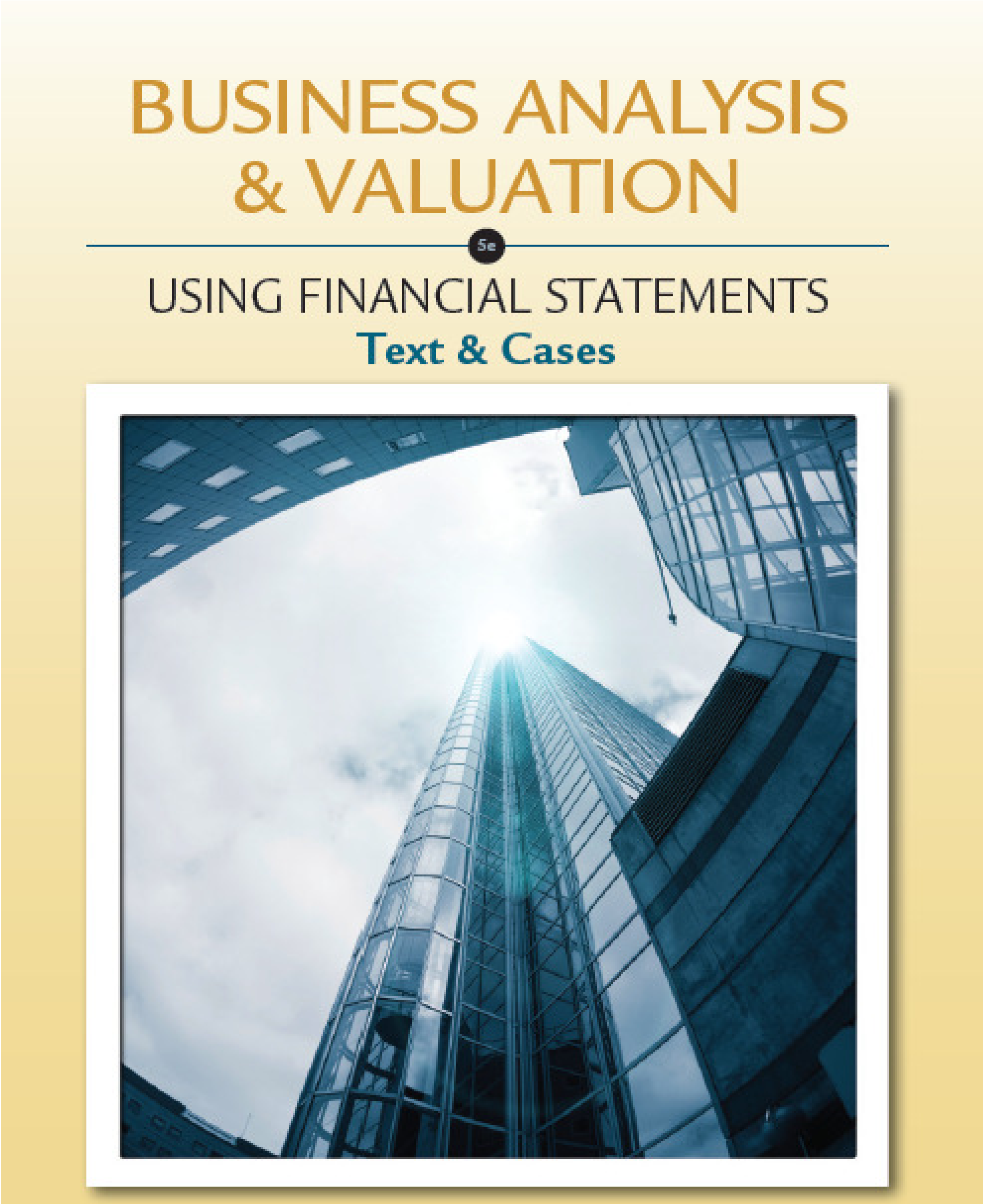

Chapter 8: Prospective Analysis: Valuation Implementation

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

WACC = % debt financing[1] * After-tax cost of debt +
% equity financing * 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 8-3 Performance Forecast for TJX

Forecast Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Equity Valuation										
Abnormal earnings	1,413.9	1,396.0	1,385.7	1,364.3	1,330.9	1,284.5	1,224.1	1,112.6	981.1	828.6
Abnormal ROE	42.1%	38.0%	34.9%	31.9%	29.0%	26.1%	23.2%	19.8%	16.4%	13.0%
Free cash flow to equity	1,387.6	1,429.3	1,429.8	1,420.6	1,400.9	1,369.8	1,326.3	1,233.3	1,122.2	1,024.7
Equity discount factor	0.92	0.85	0.78	0.71	0.66	0.60	0.56	0.51	0.47	0.43
Equity growth factor	1.00	1.10	1.18	1.27	1.37	1.47	1.57	1.68	1.79	1.90

Source: © Cengage Learning 2013

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)**

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

Source: © Cengage Learning 2013

Computing Asset and Equity Values: TJX Example

TABLE 8-6 Equity Valuation Summary for TJX Under Varying Scenarios

($000,000s)	Beginning Book Value	Value from Forecasts for 2011–2020	Value from Forecasts Beyond 2020 (Terminal Value)	Total Value	Value per Share ($)[1]
Scenario 1 – Persistent Abnormal Performance					
Abnormal Earnings	3,357.1	8,246.7	12,308.0	23,911.8	61.36
Abnormal ROE	3,357.1	8,246.7	12,308.0	23,911.8	61.36
Free Cash Flows to Equity	N/A	8,691.6	15,220.2	23,911.8	61.36
Scenario 2 – Abnormal Returns on Constant Sales (Real Terms)					
Abnormal Earnings	3,357.1	8,246.7	6,381.3	17,985.1	46.15
Abnormal ROE	3,357.1	8,246.7	6,381.3	17,985.1	46.15
Free Cash Flows to Equity	N/A	8,766.0	9,219.2	17,985.1	46.15
Scenario 3 – Abnormal Returns on Constant Sales (Nominal Terms)					
Abnormal Earnings	3,357.1	8,246.7	4,076.1	15,680.0	40.24
Abnormal ROE	3,357.1	8,246.7	4,076.1	15,680.0	40.24
Free Cash Flows to Equity	N/A	8,848.6	6,831.3	15,680.0	40.24
Scenario 4 – Competitive Equilibrium					
Abnormal Earnings	3,357.1	8,246.7	0.0	11,603.8	29.78
Abnormal ROE	3,357.1	8,246.7	0.0	11,603.8	29.78
Free Cash Flows to Equity	N/A	8,691.6	2,912.2	11,603.8	29.78

[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:

- <u>Accounting distortions.</u> Accounting choices, though self-correcting, affect both earnings and book value
- <u>Negative book values.</u> Start-up firms and firms in certain industrial sectors, among others, may have negative book equity.
- <u>Excessive cash balances and cash flows.</u> 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.