

Sources and Uses of Available Cost of Capital Data

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Robert F. Reilly, CFA, CPA/ABV/CFF
Willamette Management Associates
rfreilly@willamette.com

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Introduction and Discussion Outline

- This is the first in a series of AICPA FVS cost of capital Webinar series presentations
- This presentation is intended to be introductory in nature
- This series will address cost of capital issues related to both valuation analyses and economic damages analyses
- First, we will review six generally accepted cost of equity capital models
- Second, we will consider the component data requirements for these cost of capital models
- Third, we will review the data availability—and data limitations (including measurement differences)—of commonly used cost of capital data sources.
- Finally, we will consider these sources and uses of data from the perspective of the “top ten” issues related to the cost of capital data.

Generally Accepted Models for Estimating the Cost of Equity Capital

The following generally accepted models are often used by both valuation analysts and damages analysts to estimate the cost of equity capital:

- Capital asset pricing model
- Modified capital asset pricing model
- Build-up model
- Dividend yield plus capital gain yield model
- Arbitrage pricing theory model
- Fama-French three-factor model

Capital Asset Pricing Model

The original CAPM univariate formula for estimating the cost of capital for a liquid, diversified equity security is presented as follows:

$$E_r = R_f + B_j (R_m - R_f)$$

where:

E_r = cost of equity capital

R_f = risk-free rate of return

R_m = expected overall rate of return for a broad-based market portfolio of equity securities

B_j = beta coefficient of the subject publicly traded equity security j

Modified Capital Asset Pricing Model

The generally accepted formula for the modified CAPM (or the MCAPM) is presented as follows:

$$E_r = R_f + B_j (R_m - R_f) + S_p + \alpha$$

where:

E_r = cost of equity capital

R_f = risk-free rate of return

B_j = estimate of appropriate beta for the subject security j

$R_m - R_f$ = long-term equity risk premium (measurement of the overall equity market risk)

S_p = small stock equity risk premium

α = company-specific equity risk premium (measurement of other risk factors)

Build-up Model

The generally accepted formula for the build-up model is presented as follows:

$$E_r = R_f + (R_m - R_f) + I_p + S_p + \alpha$$

where:

E_r = cost of equity capital

R_f = risk-free rate of return

$R_m - R_f$ = long-term equity risk premium (measurement of the overall equity market risk)

I_p = industry adjustment equity risk premium

S_p = small stock equity risk premium

α = company-specific equity risk premium (measurement of other risk factors)

Dividend Yield plus Capital Gain Yield Model

The generally accepted formula for this cost of equity model (which is also called the DCF model) is presented as follows:

$$Er = \frac{d_1}{P_0} + \frac{P_1 - P_0}{P_0}$$

which is simplified to:

$$Er = \frac{d_1}{P_0} + g$$

- where: Er = cost of equity capital
 d_1 = the current period dividend payment*
 P_0 = the year ago stock/investment market price*
 P_1 = the current date stock/investment market price*
 g = the expected long-term growth rate*

* for the subject publicly traded security or for a selected portfolio of guideline publicly traded securities

Arbitrage Pricing Theory Model

The basic regression formula for the APT model is presented as follows:

$$E_r = (b_1)(x_1) + (b_2)(x_2) + (b_3)(x_3) + \dots + (b_n)(x_n) + \alpha$$

where:

E_r = cost of equity capital

b_1 to b_n = the concluded regression coefficients

x_1 to x_n = the selected microeconomic (i.e., financial fundamentals) and/or macroeconomic (i.e., industry or general economy) variables

α = company-specific equity risk premium

Fama-French Three-Factor Model

The generally accepted formula for this cost of equity model is:

$$E_r = R_f + (B_j \times ERP) + S_j \times SMBP + H_j \times HMLP$$

where:

E_r = cost of equity capital

R_f = risk-free rate of return

B_j = beta coefficient of publicly traded security j

ERP = long-term equity risk premium

S_j = small-minus-big coefficient in the Fama-French regression equation

$SMBP$ = expected small-minus-big equity risk premium

H_j = high-minus-low coefficient in the Fama-French regression equation

$HMLP$ = expected high-minus-low equity risk premium

Top Ten Issues Related to the Selection of Cost of Capital Data

- Risk-free rate of return measurement
- Appropriate historical time period for the equity risk premium
- Size effect equity risk premium measurement
- Beta measurement—levered or unlevered
- Beta measurement—appropriate market proxy
- Beta measurement—appropriate time period
- Beta measurement—appropriate frequency of data observations
- Beta measurement—appropriate adjustment factors
- Industry equity risk premium measurement
- Company-specific equity risk premium measurement

Risk-Free Rate of Return Estimation

- Analysts often use the yield to maturity on long-term (usually 20-year) Treasury bonds as of the valuation date, as a proxy for the risk-free rate.
- The source of these data is www.federalreserve.gov.
- Treasury bond yields compensate bond holders for “renting” out their money and for the expected loss of purchasing power (i.e., inflation) during the bond holding period.
- The term of the Treasury bonds used to estimate R_f should be consistent with the measurement of the general equity risk premium.

Risk-Free Rate of Return Estimation (cont.)

- 20-year Treasury bond yields did decrease materially since October 2008, but they are now increasing.

Yield on 20-year (constant maturity) T-bonds

| | | |
|------|--------------------------|-------|
| 2004 | Average for 12 months | 5.02% |
| 2005 | Average for 12 months | 4.62% |
| 2006 | Average for 12 months | 4.98% |
| 2007 | Average for 12 months | 4.87% |
| 2008 | Average - first 8 months | 4.52% |
| 2008 | September 30 | 4.43% |
| 2008 | October 31 | 4.78% |
| 2008 | November 30 | 3.72% |
| 2008 | December 31 | 3.03% |
| 2009 | June 30 | 4.30% |
| 2009 | September 30 | 4.02% |
| 2009 | December 31 | 4.58% |

Risk-Free Rate of Return Estimation (cont.)

- It is unlikely that the 2008 decrease in the 20-year Treasury bond yield was due primarily to a decrease in inflation expectations.
- That decrease in yields is more likely a reflection of the “flight to quality” witnessed in financial markets as investors moved from risky assets into “risk-free” assets. That decrease in the R_f appears to have been a short-term aberration.
- During a recession, the use of a spot yield on Treasury bonds may cause analysts to underestimate a subject company’s actual cost of capital.
- As alternatives in a recession, analysts may elect to use (1) a longer-term average Treasury yield or (2) a forward rate of Treasury securities.

General Equity Risk Premium Differences

Appropriate Historical Time Period

- Morningstar (Ibbotson) *Stocks, Bonds, Bills and Inflation Valuation Yearbook* (SBBI) uses the time period of 1926 to the present to calculate the general equity risk premium. The Center for Research in Security Prices (the original source for these data) selected 1926 as the starting date for several reasons:
 - Quality financial data became available beginning about 1926
 - One full business cycle of data is included before the stock market crash of 1929
 - A conscious effort was made to include the period of extreme market volatility in the 1920s and 1930s

General Equity Risk Premium Differences (cont.)

Appropriate Historical Time Period

- The Duff & Phelps, LLC, *Risk Premium Report* uses the time period of 1963 to the present to calculate the historical size-adjusted equity risk premiums.
- Duff & Phelps uses the Standard & Poor's Compustat data in addition to the CSRP data, and Compustat was established in 1963.

General Equity Risk Premium Differences (cont.)

Incorporating the size effect equity risk premium:

- Morningstar (Ibbotson) *SBI* provides data regarding the difference between (1) the total equity risk premium returns for all public companies and (2) the equity risk premium returns realized by smaller, more thinly capitalized companies.
- *SBI* disaggregates the NYSE/AMEX/Nasdaq into ten size deciles based on market capitalization.
- The size-related equity risk premium can then be added to the overall equity risk premium.

General Equity Risk Premium Differences (cont.)

Incorporating the size effect risk premium (cont.)

- Duff & Phelps, LLC, uses eight different measures of size, including these fundamental financial characteristics: market value of equity, book value of equity, market value of invested capital, 5-year average net income, total assets, 5-year average EBITDA, sales, and number of employees.
- The Duff & Phelps *Risk Premium Report* presents a smoothed average historical equity risk premium for each size category.

General Equity Risk Premium Differences (cont.)

| | Value | | | |
|--|---|----|--|---|
| Yields (Riskless Rates)¹ | | | | |
| Long-term (20-year) U.S. Treasury Coupon Bond Yield | 3.0% | | | |
| Equity Risk Premium² | | | | |
| Long-horizon expected equity risk premium (historical): large company stock total returns minus long-term government bond income returns | 6.5 | | | |
| Long-horizon expected equity risk premium (supply side): historical equity risk premium minus price-to-earnings ratio calculated using three-year average earnings | 5.7 | | | |
| Size Premium³ | | | | |
| Decile | Market Capitalization of Smallest Company (in millions) | | Market Capitalization of Largest Company (in millions) | Size Premium (Return in Excess of CAPM) |
| Mid-Cap, 3-5 | \$1,849,950 | -- | \$7,360,271 | 0.94% |
| Low-Cap, 6-8 | 453,398 | -- | 1,848,951 | 1.74 |
| Micro-Cap, 9-10 | 1,575 | -- | 453,254 | 3.74 |
| Breakdown of Deciles 1-10 | | | | |
| 1-Largest | 18,677,540 | -- | 485,651,938 | -0.36 |
| 2 | 7,434,806 | -- | 18,503,467 | 0.62 |
| 3 | 4,229,323 | -- | 7,360,271 | 0.74 |
| 4 | 2,785,698 | -- | 4,225,152 | 0.97 |
| 5 | 1,849,950 | -- | 2,785,538 | 1.54 |
| 6 | 1,198,013 | -- | 1,848,951 | 1.63 |
| 7 | 753,676 | -- | 1,197,133 | 1.62 |
| 8 | 453,398 | -- | 753,448 | 2.35 |
| 9 | 218,743 | -- | 453,254 | 2.71 |
| 10-Smallest | 1,575 | -- | 218,533 | 5.81 |
| Breakdown of the 10th Decile | | | | |
| 10a | 136,599 | -- | 218,533 | 4.11 |
| 10b | 1,575 | -- | 136,500 | 9.53 |

¹ As of December 31, 2008. Maturity is approximate.

² See chapter 5 for complete methodology.

³ See chapter 7 for complete methodology.

Note: Examples on how these variables can be used are found in Chapters 3 and 4.

General Equity Risk Premium Differences (cont.)

Duff & Phelps, LLC Risk Premium Report Illustrative Example (cont.)

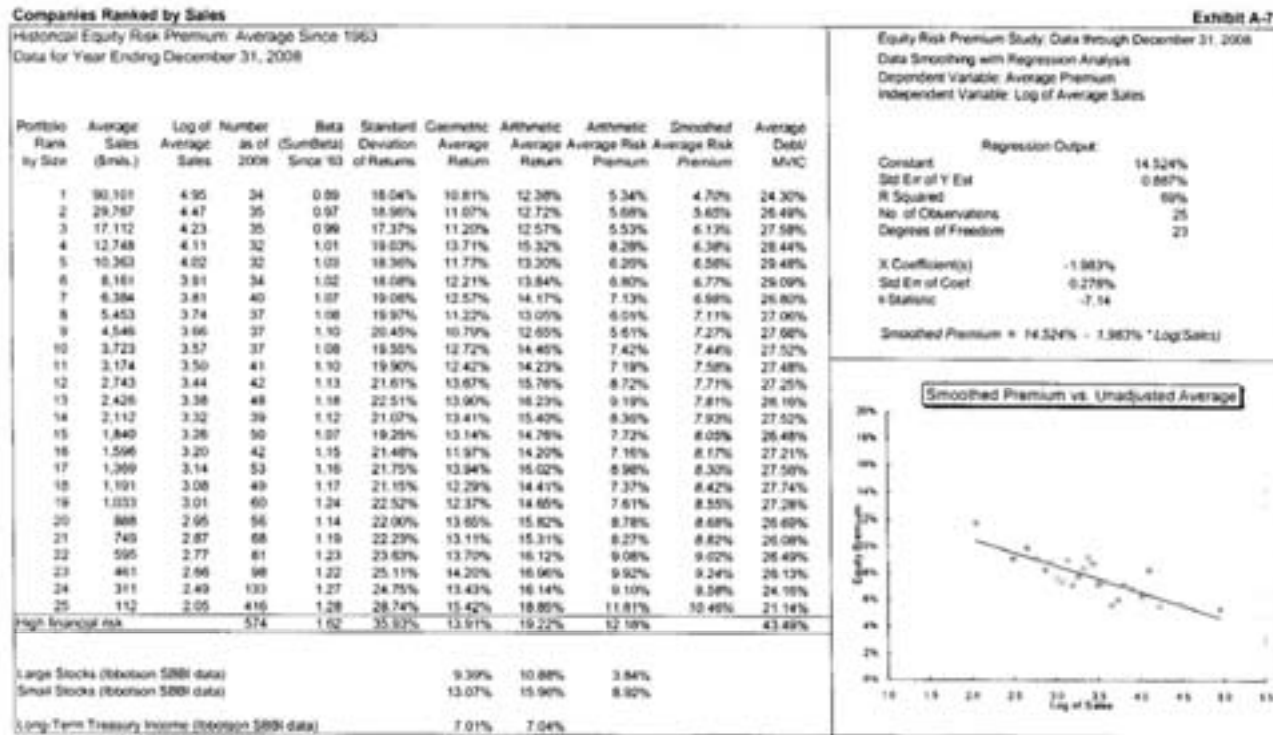
Business Valuation Resources

Duff & Phelps, LLC
Risk Premium Report
2009

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General Equity Risk Premium Differences (cont.)

Illustration of Duff & Phelps, LLC Risk Premium Report



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General Equity Risk Premium Differences (cont.)

Duff & Phelps, LLC Risk Premium Report Illustrative Example

| Companies Ranked by Sales | | | | | | | | | | Premium over CAPM | | Exhibit B-7 |
|--|------------------------|-------------|--------------------------|---------------------------|---------------------------------|------------------------|-------------------|----------------------------|--|-------------------|--|---|
| Historical Equity Risk Premium: Average Since 1953 Data for Year Ending December 31, 2008 | | | | | | | | | | | | Equity Risk Premium Study: Data through December 31, 2008 Data Smoothing with Regression Analysis Dependent Variable: Premium over CAPM Independent Variable: Log of Average Sales |
| Portfolio Rank by Size | Average Sales (\$mln.) | Log of Size | Beta (SumBeta) Since '03 | Arithmetic Average Return | Arithmetic Average Risk Premium | Indicated CAPM Premium | Premium over CAPM | Smoothed Premium over CAPM | | | | |
| 1 | 90,101 | 4.95 | 0.89 | 12.38% | 5.34% | 3.43% | 1.91% | 1.25% | | | | |
| 2 | 29,787 | 4.47 | 0.97 | 12.72% | 5.88% | 3.71% | 1.98% | 1.94% | | | | |
| 3 | 17,112 | 4.23 | 0.99 | 12.57% | 5.53% | 3.62% | 1.71% | 2.29% | | | | |
| 4 | 12,748 | 4.11 | 1.01 | 15.32% | 8.28% | 3.87% | 4.41% | 2.47% | | | | |
| 5 | 10,363 | 4.02 | 1.03 | 13.30% | 6.26% | 3.95% | 2.32% | 2.60% | | | | |
| 6 | 8,161 | 3.91 | 1.02 | 13.84% | 6.80% | 3.92% | 2.68% | 2.75% | | | | |
| 7 | 6,384 | 3.81 | 1.07 | 14.17% | 7.13% | 4.13% | 3.01% | 2.90% | | | | |
| 8 | 5,453 | 3.74 | 1.08 | 13.05% | 6.01% | 4.16% | 1.85% | 3.00% | | | | |
| 9 | 4,540 | 3.66 | 1.10 | 12.65% | 5.61% | 4.23% | 1.38% | 3.11% | | | | |
| 10 | 3,723 | 3.57 | 1.08 | 14.48% | 7.42% | 4.15% | 3.27% | 3.24% | | | | |
| 11 | 3,174 | 3.50 | 1.10 | 14.23% | 7.10% | 4.22% | 2.97% | 3.34% | | | | |
| 12 | 2,743 | 3.44 | 1.13 | 15.78% | 8.72% | 4.33% | 4.58% | 3.43% | | | | |
| 13 | 2,426 | 3.38 | 1.18 | 16.23% | 9.19% | 4.52% | 4.67% | 3.51% | | | | |
| 14 | 2,112 | 3.32 | 1.12 | 15.40% | 8.30% | 4.31% | 4.05% | 3.59% | | | | |
| 15 | 1,840 | 3.26 | 1.07 | 14.76% | 7.72% | 4.10% | 3.62% | 3.68% | | | | |
| 16 | 1,596 | 3.20 | 1.15 | 14.20% | 7.18% | 4.43% | 2.73% | 3.77% | | | | |
| 17 | 1,389 | 3.14 | 1.16 | 15.02% | 8.08% | 4.44% | 4.54% | 3.80% | | | | |
| 18 | 1,191 | 3.08 | 1.17 | 14.41% | 7.37% | 4.51% | 2.87% | 3.95% | | | | |
| 19 | 1,033 | 3.01 | 1.24 | 14.65% | 7.81% | 4.77% | 2.84% | 4.04% | | | | |
| 20 | 888 | 2.95 | 1.14 | 15.82% | 8.78% | 4.37% | 4.41% | 4.13% | | | | |
| 21 | 749 | 2.87 | 1.19 | 15.31% | 8.27% | 4.50% | 3.72% | 4.24% | | | | |
| 22 | 595 | 2.77 | 1.23 | 16.12% | 9.58% | 4.73% | 4.35% | 4.39% | | | | |
| 23 | 481 | 2.66 | 1.22 | 16.96% | 9.92% | 4.67% | 5.25% | 4.54% | | | | |
| 24 | 311 | 2.49 | 1.27 | 16.14% | 9.10% | 4.88% | 4.22% | 4.78% | | | | |
| 25 | 112 | 2.05 | 1.28 | 18.85% | 11.81% | 4.92% | 6.90% | 5.42% | | | | |
| High financial risk | | | 1.62 | 19.22% | 12.18% | 6.24% | 5.94% | | | | | |
| Large Stocks (Ibbotson S&P data) | | | | 10.88% | 3.84% | | | | | | | |
| Small Stocks (Ibbotson S&P data) | | | | 15.96% | 8.92% | | | | | | | |
| Long-Term Treasury Income (Ibbotson S&P data) | | | | 7.04% | | | | | | | | |

Regression Output

Constant: 8.359%

Std Err of Y Est: 0.910%

R Squared: 52%

No. of Observations: 25

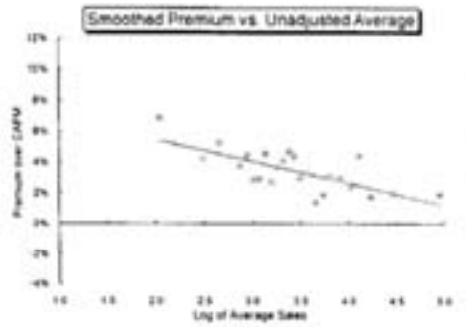
Degrees of Freedom: 23

X Coefficient(s): -1.434%

Std Err of Coef: 0.285%

t-Statistic: -5.04

Smoothed Premium = 8.359% - 1.434% * Log(Sales)



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Beta—Use of Levered or Unlevered Beta?

- Levered beta—measures the systematic risk for the equity shareholders of the company. It incorporates both the business and financing risk undertaken by the company and borne by the equity shareholders.
- Unlevered beta—also called an “asset beta”—removes the company’s financing decision from the beta calculation and reflects only the company business risk.

Unlevered Beta

The generally accepted formula for unlevering a beta is presented as follows:

$$\beta_{Ui} = \frac{\beta_{Li}}{1 + \frac{D_i}{E_i} (1 - t_i)}$$

where:

β_{Ui} = the unlevered beta for company i

β_{Li} = the levered beta for company i

D_i = total debt capitalization for company i

E_i = total equity capitalization for company i

t_i = marginal income tax rate for company i

Relevered Beta

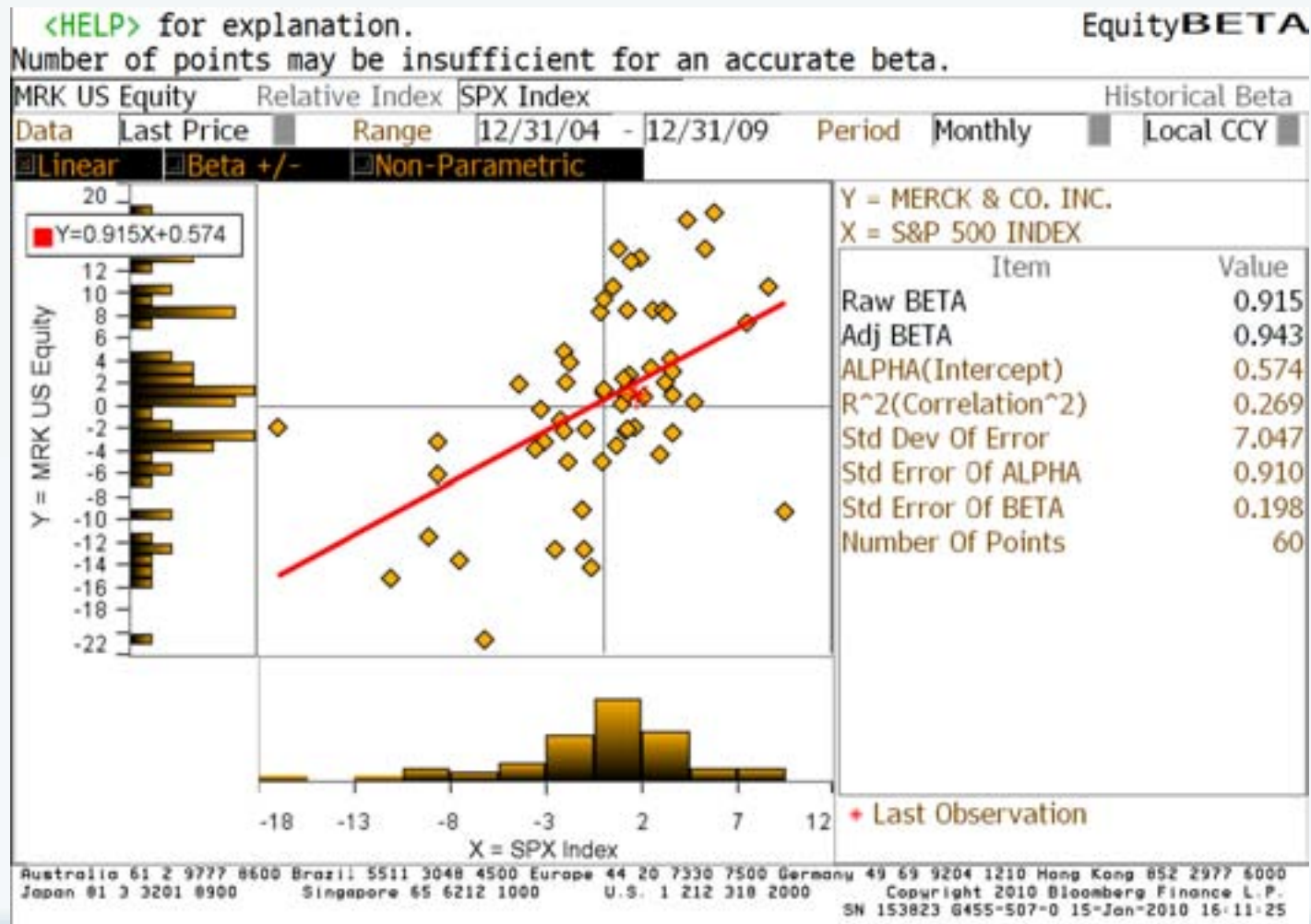
- The unlevered beta can then be relevered using either (1) the subject company's actual capital structure or (2) an industry-average capital structure.
- The generally accepted formula for revering a beta is presented as follows:

$$\beta_{Li} = \beta_{Ui} \left[1 + \frac{D_i}{E_i} (1 - t_i) \right]$$

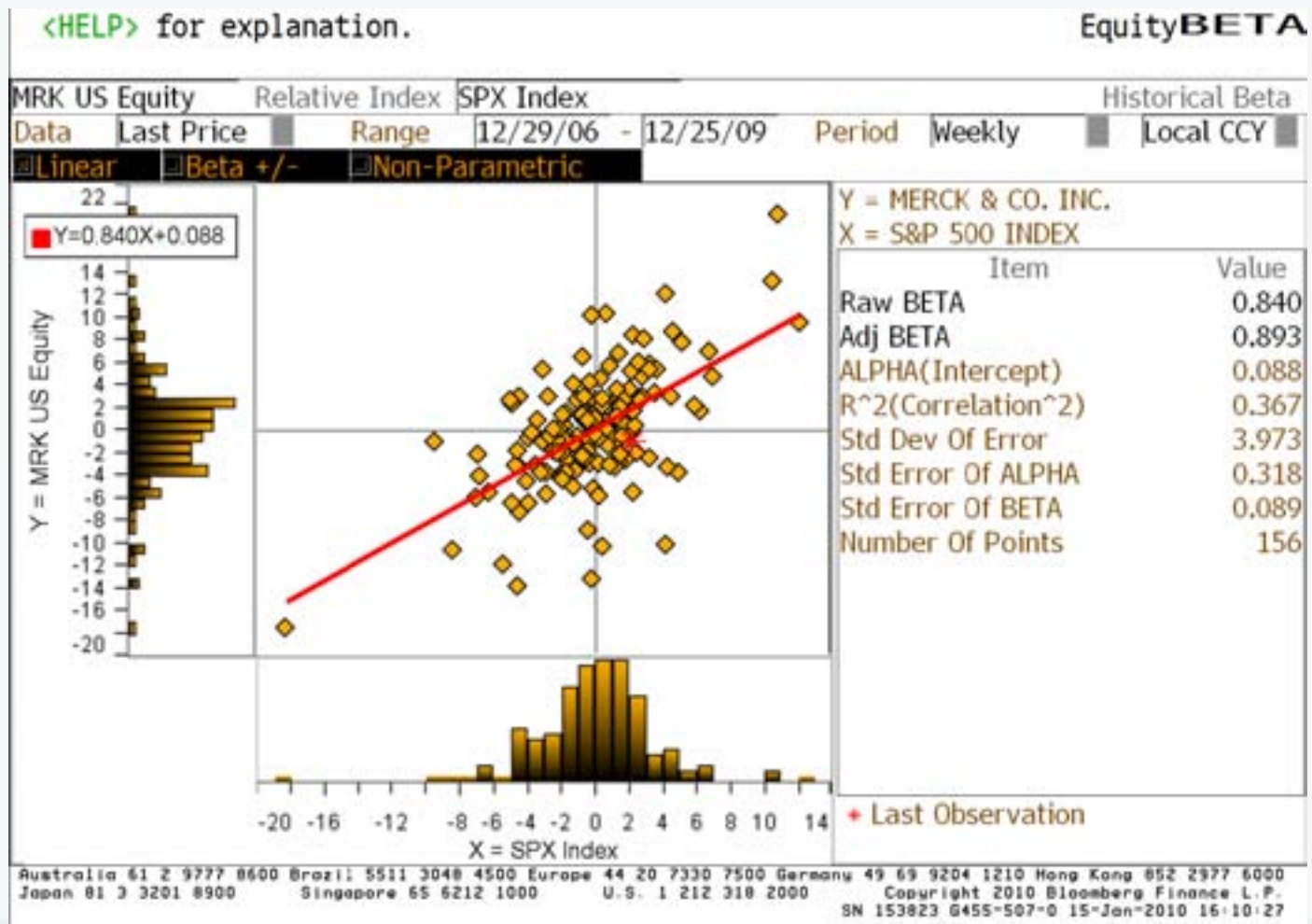
Beta—Common Sources of Beta Data

- Bloomberg
- Compustat
- Capital IQ
- *ValueLine*
- Morningstar (Ibbotson) *Beta Book*
- Morningstar (Ibbotson) *Cost of Capital Book* (for industry betas)
- the Barra *Beta Book*

Beta—Common Sources of Data—Bloomberg



Beta—Common Sources of Data—Bloomberg



Beta—Common Sources of Data—Compustat

36 Months of Beta for Integrated Electrical Svcs (IESC)

| | | | |
|-------|--------|-------|--------|
| Dec07 | 2.5515 | Jun06 | 1.6501 |
| Nov07 | 2.3048 | May06 | 1.6101 |
| Oct07 | 2.0852 | Apr06 | 1.5932 |
| Sep07 | 1.8403 | Mar06 | 1.4411 |
| Aug07 | 1.8887 | Feb06 | 1.4095 |
| Jul07 | 1.9037 | Jan06 | 1.3431 |
| Jun07 | 1.8104 | Dec05 | 1.346 |
| May07 | 1.6041 | Nov05 | 1.3477 |
| Apr07 | 1.5666 | Oct05 | 1.6181 |
| Mar07 | 1.4848 | Sep05 | 1.5672 |
| Feb07 | 1.5221 | Aug05 | 1.5852 |
| Jan07 | 1.5338 | Jul05 | 1.8131 |
| Dec06 | 1.5201 | Jun05 | 1.7043 |
| Nov06 | 1.5169 | May05 | 1.6975 |
| Oct06 | 1.5253 | Apr05 | 1.6993 |
| Sep06 | 1.4564 | Mar05 | 1.6472 |
| Aug06 | 1.6833 | Feb05 | 1.416 |
| Jul06 | 1.6349 | Jan05 | 1.4919 |

Beta—Common Sources of Data—Capital IQ



Beta—Common Sources of Data—ValueLine



Beta—Common Sources of Data— Morningstar (*Cost of Capital Book*)

STATISTICS FOR SIC CODE 2834
Pharmaceutical Preparations
This industry includes 138 companies.

Industry Description
This industry includes companies that manufacture pharmaceuticals and related products. It includes companies that manufacture pharmaceuticals for human use, and companies that manufacture pharmaceuticals for animal use. It also includes companies that manufacture pharmaceuticals for both human and animal use.

| Item | Value | Unit | Year |
|-------------------|---------|---------------------|------|
| Total Assets | 180,027 | Millions of Dollars | 2019 |
| Total Liabilities | 138,036 | Millions of Dollars | 2019 |
| Equity Capital | 41,991 | Millions of Dollars | 2019 |
| Debt Capital | 96,045 | Millions of Dollars | 2019 |
| Total Capital | 138,040 | Millions of Dollars | 2019 |

Market Data

| Item | Value | Unit | Year |
|-----------------------|---------|---------------------|------|
| Market Capitalization | 111,000 | Millions of Dollars | 2019 |
| Enterprise Value | 138,000 | Millions of Dollars | 2019 |
| Free Cash Flow | 1,500 | Millions of Dollars | 2019 |
| Operating Income | 3,500 | Millions of Dollars | 2019 |

Financial Ratios

| Item | Value | Year |
|--------------------------|-------|------|
| Debt to Capitalization | 0.68 | 2019 |
| Equity to Capitalization | 0.32 | 2019 |
| Return on Equity | 15.0% | 2019 |
| Return on Assets | 10.0% | 2019 |

Capital Structure

| Item | Value | Year |
|---------------|---------|------|
| Equity | 42,000 | 2019 |
| Debt | 96,000 | 2019 |
| Total Capital | 138,000 | 2019 |

Industry Statistics

| Item | Value | Year |
|-----------------------|---------|------|
| Number of Companies | 138 | 2019 |
| Market Capitalization | 111,000 | 2019 |
| Enterprise Value | 138,000 | 2019 |

Beta—Common Sources of Data—Barra *Beta Book*

BARRA Beta Book
Australian Equity Model

COMMONWEALTH BANK
SEDOL: 621503
Primary Industry: Banks and Finance

| | Predicted Beta | Historical Beta | Specific Risk | Total Risk | Yield | Price | Market Capitalization (Local Currency) |
|-----------|-------------------|--------------------|---------------|------------|--------|-------|---|
| 31-Jul-01 | 1.166 | 0.820 | 17.018% | 24.407% | 4.510% | 29.50 | 36,698,423,296.00 |
| 30-Jun-01 | 1.099 | 0.722 | 13.203% | 21.665% | 3.890% | 34.15 | 42,483,122,176.00 |
| 31-May-01 | 1.074 | 0.701 | 12.931% | 21.384% | 4.260% | 31.20 | 38,813,237,248.00 |
| 30-Apr-01 | 1.053 | 0.706 | 12.438% | 21.032% | 4.610% | 28.84 | 35,877,388,288.00 |
| 31-Mar-01 | 1.086 | 0.738 | 12.497% | 21.097% | 4.650% | 28.60 | 36,297,900,032.00 |
| 28-Feb-01 | 1.090 | 0.748 | 12.325% | 21.142% | 4.410% | 30.19 | 38,300,745,728.00 |
| 31-Jan-01 | 1.067 | 0.746 | 12.495% | 21.285% | 4.060% | 32.00 | 40,544,370,688.00 |
| 31-Dec-00 | 1.097 | 0.765 | 12.295% | 21.298% | 4.210% | 30.90 | 39,155,335,168.00 |
| 30-Nov-00 | 1.084 | 0.753 | 12.794% | 21.578% | 4.100% | 31.69 | 40,176,779,264.00 |
| 31-Oct-00 | 1.044 | 0.750 | 12.838% | 21.545% | 4.530% | 28.71 | 36,392,992,768.00 |
| 30-Sep-00 | 1.034 | 0.771 | 12.782% | 21.542% | 4.710% | 27.60 | 34,785,558,528.00 |
| 31-Aug-00 | 1.057 | 0.767 | 13.388% | 21.675% | 2.100% | 27.68 | 34,890,186,752.00 |
| 31-Jul-00 | 1.064 | 0.769 | 13.622% | 22.148% | 4.460% | 27.80 | 35,029,909,504.00 |
| 30-Jun-00 | 1.068 | 0.742 | 13.738% | 22.369% | 4.480% | 27.69 | 34,892,218,368.00 |
| 31-May-00 | 0.985 | 0.821 | 12.990% | 21.269% | 4.450% | 27.88 | 25,326,862,336.00 |
| 30-Apr-00 | 0.969 | 0.851 | 12.900% | 21.295% | 4.750% | 26.08 | 23,690,870,784.00 |
| 31-Mar-00 | 0.936 | 0.864 | 12.478% | 20.816% | 5.500% | 22.54 | 20,363,984,896.00 |
| 29-Feb-00 | 0.874 | 0.852 | 11.660% | 20.073% | 4.960% | 24.99 | 22,556,213,248.00 |
| 31-Jan-00 | 0.901 | 0.870 | 10.496% | 19.401% | 4.410% | 26.10 | 23,547,625,472.00 |
| 31-Dec-99 | 0.919 | 0.824 | 10.182% | 19.451% | 4.380% | 26.23 | 23,664,934,912.00 |
| 30-Nov-99 | 0.945 | 0.839 | 9.800% | 19.368% | 4.430% | 25.94 | 23,403,282,432.00 |
| 31-Oct-99 | 0.979 | 0.836 | 9.353% | 19.361% | 4.500% | 25.69 | 23,706,141,819.11 |
| 30-Sep-99 | 0.968 | 0.836 | 9.699% | 19.653% | 4.800% | 24.14 | 22,125,574,641.49 |
| 31-Aug-99 | 0.954 | 0.802 | 9.699% | 19.621% | 4.700% | 24.66 | 22,595,124,729.05 |
| 31-Jul-99 | 0.952 | 0.802 | 10.046% | 19.757% | 4.400% | 24.12 | 22,103,460,096.00 |
| 30-Jun-99 | 0.942 | 0.802 | 10.392% | 19.897% | 4.400% | 24.06 | 22,037,249,088.00 |
| 31-May-99 | 0.969 | 0.783 | 10.739% | 20.233% | 4.200% | 25.15 | 23,028,536,448.00 |
| 30-Apr-99 | 0.942 | 0.783 | 10.739% | 20.044% | 3.900% | 27.52 | 25,197,232,384.00 |
| 31-Mar-99 | 0.963 | 0.783 | 10.739% | 20.107% | 4.100% | 25.89 | 23,493,743,744.00 |
| 28-Feb-99 | 0.961 | 0.807 | 11.432% | 20.509% | 4.400% | 24.25 | 22,617,731,136.00 |
| 31-Jan-99 | 0.963 | 0.807 | 11.085% | 20.389% | 4.300% | 23.88 | 22,370,299,456.00 |

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Differences in the Various Beta Data Sources

Measurement of the Market Proxy

- Bloomberg allows for the selection of over 20 domestic series (the default is the S&P 500)
- Compustat uses the S&P 500
- Capital IQ allows for the selection of 8 domestic series (the default is the S&P 500)
- Morningstar (Ibbotson) uses the S&P 500
- *ValueLine* uses the NYSE Composite Series
- Barra *Beta Book* calculates predicted betas (forward-looking)

Differences in the Various Beta Data Sources (cont.)

Beta Measurement Time Period

- Bloomberg time period is adjustable (the default is two years)
- Compustat uses five years
- Capital IQ time period is adjustable (the default is two years)
- Morningstar (Ibbotson) uses five years
- *ValueLine* uses five years

Differences in the Various Beta Data Sources (cont.)

Frequency of the Data Observations

- Bloomberg is adjustable (the default is weekly)
- Compustat is monthly
- Capital IQ has a choice of either weekly or monthly (the default is weekly)
- Morningstar (Ibbotson) is monthly
- *ValueLine* is weekly

Differences in the Various Beta Data Sources (cont.)

Beta Normalization Adjustment Factors

- Bloomberg is $(0.67 \times \text{unadjusted beta}) + (0.33 \times 1.0)$
- Compustat is unadjusted
- Capital IQ is unadjusted
- Morningstar (Ibbotson) is adjusted toward the peer group beta weighted by the statistical significance
- *ValueLine* is $0.35 + (0.67 \times \text{unadjusted beta})$

Industry Equity Risk Premium

- Industry risk can be incorporated into the modified CAPM or the build-up model
- Industry risk can be incorporated through the beta in the modified CAPM model
- Industry betas can be found in the Morningstar (Ibbotson) *Cost of Capital Yearbook*. The *Yearbook* provides a levered raw beta, an adjusted beta, and an unlevered adjusted beta for numerous industries.

Industry Equity Risk Premium (cont.)

- In the build-up model, the industry risk premium can be incorporated using the Morningstar *Stocks, Bonds, Bills and Inflation Valuation Yearbook*.
- The industry equity risk premium has been published in *SBI* since 2000.
- The criteria used to select companies for inclusion in the *SBI* industry risk premium calculation are:
 - At least 36 months of return data available.
 - Sales greater than \$1 million.
 - Market capitalization equal to or greater than \$10,000.
- An industry must have at least five companies that meet the above criteria in order to be included in *SBI*.

Industry Equity Risk Premium (cont.)

Illustrative Morningstar Industry Risk Premium Data

Industry Premia Estimates

Through Year-end 2008

| IC Code | Item Description | Number of Companies* | Industry Premia |
|----------------------------------|--|----------------------|-----------------|
| Manufacturing (Continued) | | | |
| 22 | Textile Mill Products | 16 | -2.89 |
| 23 | Apparel and Other Finished Products Made from Fabrics | 45 | 1.64 |
| 230 | Apparel and other Finished Products | 14 | 1.25 |
| 231 | Men's and Boy's Furnishings, Work Clothing, and Allied Garments | 9 | 0.89 |
| 232 | Women's, Misses', and Juniors' Blouses and Shirts | 12 | 4.02 |
| 2330 | Women's, Misses', and Juniors' Outerwear | 5 | 5.07 |
| 24 | Lumber and Wood Products, Except Furniture | 32 | 5.72 |
| 241 | Logging | 6 | -5.06 |
| 242 | Sawmills and Planing Mills | 9 | 8.03 |
| 2421 | Sawmills and Planing Mills, General | 6 | 3.17 |
| 243 | Wood Buildings and Mobile Homes | 14 | 6.25 |
| 2431 | Mobile Homes | 6 | 9.46 |
| 2432 | Prefabricated Wood Buildings and Components | 8 | 0.93 |
| 25 | Furniture and Fixtures | 26 | 2.14 |
| 251 | Household Furniture | 13 | 1.97 |
| 2511 | Wood Household Furniture, Except Upholstered | 9 | 1.75 |
| 252 | Office Furniture | 5 | 1.29 |
| 26 | Paper and Allied Products | 45 | -2.87 |
| 261 | Pulp Mills | 5 | 1.76 |
| 262 | Paper Mills | 9 | 0.16 |
| 263 | Paperboard Mills | 11 | 4.28 |
| 2631 | Paperboard Containers and Boxes | 7 | 1.85 |
| 2632 | Coated and Laminated Paper, Not Elsewhere Classified | 22 | -4.22 |
| 2672 | Coated and Laminated Paper, Not Elsewhere Classified | 16 | -4.92 |
| 27 | Printing, Publishing, and Allied Industries | 57 | 2.91 |
| 271 | Newspapers, Publishing, or Publishing and Printing | 16 | 2.32 |
| 272 | Periodicals, Publishing, or Publishing and Printing | 13 | 8.76 |
| 273 | Books | 32 | -2.72 |
| 2731 | Books, Publishing, or Publishing and Printing | 9 | -1.24 |
| 275 | Commercial Printing | 11 | 4.42 |
| 2760 | Commercial Printing | 5 | 4.42 |
| 28 | Chemicals and Allied Products | 442 | -2.12 |
| 281 | Industrial Inorganic Chemicals | 39 | 0.02 |
| 2812 | Alkalies and Oxides | 6 | 0.95 |
| 2813 | Industrial Gases | 5 | 0.64 |
| 2819 | Industrial Inorganic Chemicals, Not Elsewhere Classified | 28 | 3.32 |
| 282 | Plastics Materials and Synthetic Resins | 27 | -1.31 |
| 2821 | Plastics Materials, Synthetic Resins, and Nonvulcanizable Elastomers | 21 | -2.98 |
| 2824 | Manmade Organic Fibers, Except Cellulose | 3 | 6.42 |
| 283 | Drugs | 296 | -2.76 |
| 2833 | Medicinal Chemicals and Botanical Products | 10 | -0.94 |
| 2834 | Pharmaceutical Preparations | 157 | 3.02 |
| 2835 | In Vitro and In Vivo Diagnostic Substances | 48 | 1.67 |
| 2836 | Biological Products, Except Diagnostic Substances | 31 | 2.04 |
| 284 | Soap, Detergents, and Cleaning Preparation, Cosmetics, Perfumes | 32 | -0.69 |
| 2842 | Specialty Cleaning, Polishing, and Sanitation Preparations | 9 | -3.91 |
| 2844 | Perfumes, Cosmetics, and Other Toilet Preparations | 22 | -2.49 |
| 285 | Paints, Varnishes, Lacquers, Enamels, and Allied Products | 9 | -1.71 |

*To view the full list of companies, download the Industry Premia Company List Report at <http://data.morningstar.com/IRP>

Company-Specific Equity Risk Premium

- The company-specific risk premium is typically estimated by the analyst using his or her professional judgment.
- There are, however, several sets of “factors” that the analyst may consider when estimating the company-specific equity risk premium:
 - the Black/Green factors
 - the Warren Miller factors
 - the Gary Trugman factors

Company-Specific Risk Premium (cont.)

Black/Green Factors

Parnell Black and Robert Green (of Black/Green & Company) have suggested a set of CSRP factors for the valuation analyst's consideration. The various Black/Green CSRP factors are summarized in the following six categories:

- competition
- financial strength
- management ability and depth
- profitability and stability of earnings
- national economic effects
- local economic effects

Company-Specific Risk Premium (cont.)

Warren Miller Factors

Warren Miller (of Beckmill Research) has suggested a competitive advantage/strategic analysis structure for estimating the appropriate CSRP. Miller groups into three categories the CSRP factors to be considered in a strength, weaknesses, opportunities, and threats (SWOT) analysis. These three categories of SWOT-related factors are based on the groundbreaking strategic planning and analysis work of Michael E. porter. Miller's three categories of individual CSRP factors are as follows:

- macroenvironmental
- industry
- company

Company-Specific Risk Premium (cont.)

Warren Miller Factors (cont.)

Within the general framework of Porter's competitive strategy analysis, the Miller macroenvironmental considerations include the following individual factors:

- economic
- political
- international
- demographic
- technological sociocultural

Company-Specific Risk Premium (cont.)

Warren Miller Factors (cont.)

Miller also suggests that the analyst study the subject corporation's competitive position within the subject industry. The Miller industry considerations include the following factors:

- defining the industry
- determining market structure
- estimating relative market shares
- applying the Michael Porter “five-forces framework”

Company-Specific Risk Premium (cont.)

Gary Trugman Factors

Trugman presents three categories of individual CSRP factors. Trugman's first category of CSRP considerations relates to the following risk factors:

1. economy risk
2. operating risk
3. asset risk
4. market risk
5. regulatory risk
6. business risk
7. financial risk
8. product risk
9. technological risk
10. legal risk

Company-Specific Risk Premium (cont.)

Gary Trugman Factors (cont.)

Trugman's second category of CSRP considerations relates to the following nonfinancial factors:

- economic conditions
- location of business
- depth of management
- barriers to entry into market
- industry conditions
- competition
- quality of management

Company-Specific Risk Premium (cont.)

Gary Trugman Factors (cont.)

Trugman's third category of CSRP considerations relates to the following company-specific factors:

- economic conditions
- location of business
- depth of management
- barriers to entry into market
- industry conditions
- competition
- quality of management
- the bottom line

Company-Specific Risk Premium (cont.)

The Butler-Pinkerton Framework

- Peter Butler and Keith Pinkerton (of Hooper Cornell PLLC) have suggested that the CSRP for a publicly traded corporation can be estimated more quantitatively.
- They suggest measuring (1) the total risk of a publicly traded company based upon the fluctuation of its trading price and (2) that company's beta.
- The difference between the two measurements includes (1) the subject publicly traded company size premium and (2) the subject publicly traded company CSRP.
- Subtracting the public company size premium from the total public company nonsystematic risk results in an estimate of the subject public company's CSRP.
- Butler and Pinkerton suggest that by analyzing the CSRP of guideline publicly traded companies in this way, the valuation analyst can be more specific about the size of the CSRP to apply to the valuation of privately held companies.

Generally Accepted Sources of Cost of Capital Data

- Federal Reserve, www.federalreserve.gov (for the risk-free rate)
- *Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook* (Chicago: Morningstar, Inc., annual), global.morningstar.com/SBBIYearbooks (general equity risk premium, industry premiums, size premiums, et al.)
- Duff & Phelps, LLC, *Risk Premium Report* (Chicago: Duff & Phelps, LLC, annual), www.bvmarketdata.com (size-adjusted equity risk premiums)
- *Ibbotson Cost of Capital Yearbook* (Chicago: Morningstar, Inc., annual with quarterly updates), global.morningstar.com/CofCYrBk (industry betas, expected growth rates, et al.)

Generally Accepted Sources of Cost of Capital Data (cont.)

- Bloomberg database, www.bloomberg.com (betas, company earnings estimates, et al.)
- Capital IQ database, www.capitaliq.com (betas, Reuters earnings estimates, et al.)
- Compustat database, www.compustat.com (betas)
- *ValueLine Investment Survey*, www.valueline.com (betas, company earnings estimates, et al.)
- Barra Beta Books, www.barra.com or www.alacra.com

Generally Accepted Sources of Cost of Capital Data (cont.)

- *International Cost of Capital* (Chicago: Morningstar, Inc., annual)
www.global.morningstar.com/DataPublications
(international cost of capital data, country risk premiums)
- *International Equity Risk Premia Report* (Chicago: Morningstar, Inc., annual),
www.global.morningstar.com/DataPublications
(equity risk premiums for individual countries)

Morningstar—International Equity Risk Premia Report

International Equity Risk Premia Report 2007

Australia Long-Horizon Equity Risk Premia (U.S. Dollars)

Start Date: 1970-1968 End Date: 1970-2006

| End | Start Date | | | | | | | | | | | | | | | | | | | |
|------|------------|-------|-------|-------|-------|------|-------|------|------|------|------|-------|-------|------|-------|------|------|------|------|--|
| Date | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | |
| 1970 | -20.6 | | | | | | | | | | | | | | | | | | | |
| 1971 | -17.1 | -8.6 | | | | | | | | | | | | | | | | | | |
| 1972 | -5.8 | 4.1 | 16.8 | | | | | | | | | | | | | | | | | |
| 1973 | 8.6 | 4.3 | -2.2 | -21.1 | | | | | | | | | | | | | | | | |
| 1974 | 15.7 | -13.2 | -14.7 | -30.5 | -35.8 | | | | | | | | | | | | | | | |
| 1975 | -6.4 | 2.6 | -1.1 | 7.8 | 8.8 | 39.3 | | | | | | | | | | | | | | |
| 1976 | -8.2 | -5.3 | 4.6 | -10.8 | 6.3 | 10.5 | -19.0 | | | | | | | | | | | | | |
| 1977 | -7.3 | -4.4 | -3.7 | -7.8 | -4.4 | 7.4 | 8.5 | 1.2 | | | | | | | | | | | | |
| 1978 | -4.5 | -2.3 | -1.4 | -4.4 | -1.1 | 8.7 | -1.8 | 6.8 | 12.5 | | | | | | | | | | | |
| 1979 | -8.8 | 1.9 | 3.2 | 1.2 | 5.8 | 13.8 | 7.4 | 16.2 | 23.8 | 35.8 | | | | | | | | | | |
| 1980 | 3.2 | 6.1 | 7.7 | 8.8 | 10.5 | 18.9 | 14.7 | 23.2 | 30.5 | 39.5 | 43.9 | | | | | | | | | |
| 1981 | -8.1 | 2.3 | 3.4 | 1.9 | 4.7 | 11.1 | 6.3 | 11.4 | 13.8 | 14.4 | 4.8 | -35.8 | | | | | | | | |
| 1982 | -2.8 | -8.8 | -8.2 | -1.9 | 8.3 | 5.3 | 8.3 | 3.6 | 4.8 | 1.9 | -8.1 | -35.6 | -35.4 | | | | | | | |
| 1983 | 8.6 | 2.6 | 3.8 | 2.3 | 4.7 | 8.6 | 5.8 | 8.4 | 10.8 | 10.4 | 4.3 | 8.3 | 4.5 | 44.5 | | | | | | |
| 1984 | -1.1 | 8.6 | 1.3 | 8.1 | 2.8 | 6.2 | 2.4 | 5.1 | 5.8 | 4.5 | -1.6 | -13.8 | -5.4 | 9.6 | -25.2 | | | | | |
| 1985 | -8.5 | 1.2 | 1.8 | 8.8 | 2.8 | 8.4 | 3.1 | 5.8 | 6.1 | 5.2 | 8.2 | 8.5 | -1.7 | 9.5 | 8.8 | 9.3 | | | | |
| 1986 | 1.3 | 3.8 | 3.8 | 2.8 | 4.7 | 8.4 | 5.5 | 8.8 | 8.7 | 8.3 | 4.4 | 2.2 | 4.6 | 14.6 | 4.6 | 19.5 | 29.8 | | | |
| 1987 | 1.8 | 2.5 | 3.2 | 3.3 | 4.8 | 7.4 | 4.7 | 6.8 | 7.4 | 6.8 | 3.3 | -2.5 | 3.1 | 10.8 | 2.3 | 11.5 | 12.6 | 4.5 | | |
| 1988 | 2.1 | 3.7 | 4.4 | 3.6 | 5.3 | 8.5 | 6.1 | 8.2 | 8.8 | 8.4 | 5.5 | 8.7 | 5.9 | 12.8 | 6.4 | 14.3 | 16.8 | 9.1 | 22.7 | |
| 1989 | 2.8 | 3.4 | 4.1 | 3.3 | 4.9 | 7.8 | 5.8 | 7.4 | 8.8 | 7.6 | 4.8 | 8.5 | 5.8 | 10.8 | 5.2 | 11.2 | 11.7 | 5.7 | 18.8 | |
| 1990 | 8.5 | 1.8 | 2.4 | 1.8 | 2.8 | 5.8 | 3.3 | 4.8 | 5.7 | 4.5 | 1.8 | -7.4 | 1.3 | 5.9 | 8.3 | 4.6 | 3.7 | 2.9 | 2.3 | |
| 1991 | 1.4 | 2.9 | 3.4 | 2.7 | 4.1 | 8.8 | 4.8 | 6.1 | 6.5 | 8.8 | 3.8 | -8.1 | 3.5 | 7.8 | 3.3 | 7.3 | 7.8 | 2.5 | 4.2 | |
| 1992 | 8.7 | 1.8 | 2.4 | 1.7 | 2.9 | 5.3 | 3.2 | 4.8 | 4.8 | 4.3 | 1.8 | -1.6 | 1.5 | 5.2 | 8.8 | 4.1 | 3.4 | -1.8 | 8.3 | |
| 1993 | 1.8 | 3.1 | 3.6 | 3.8 | 4.7 | 6.5 | 4.8 | 6.8 | 6.3 | 5.8 | 3.8 | 8.7 | 3.8 | 7.3 | 3.6 | 6.8 | 6.5 | 3.2 | 4.5 | |
| 1994 | 1.7 | 2.8 | 3.4 | 2.7 | 3.8 | 6.1 | 4.3 | 5.8 | 5.8 | 5.4 | 3.4 | 8.6 | 3.4 | 6.6 | 3.1 | 6.8 | 5.6 | 2.6 | 3.6 | |
| 1995 | 1.8 | 2.8 | 3.4 | 2.8 | 3.8 | 5.9 | 4.2 | 5.5 | 5.7 | 5.5 | 3.4 | 8.7 | 3.3 | 6.3 | 2.2 | 5.7 | 5.4 | 2.7 | 3.8 | |
| 1996 | 2.1 | 3.1 | 3.6 | 3.8 | 4.1 | 6.1 | 4.5 | 5.6 | 5.9 | 5.5 | 3.8 | 1.3 | 3.7 | 6.5 | 3.6 | 6.8 | 5.7 | 3.3 | 4.7 | |
| 1997 | 1.4 | 2.4 | 2.8 | 2.3 | 3.3 | 5.1 | 3.6 | 4.8 | 4.4 | 4.4 | 2.7 | 8.3 | 2.5 | 5.1 | 2.2 | 4.3 | 3.8 | 1.6 | 2.2 | |
| 1998 | 1.4 | 2.4 | 2.8 | 2.3 | 3.2 | 5.8 | 3.5 | 4.5 | 4.7 | 4.3 | 2.6 | 8.3 | 2.5 | 4.8 | 2.2 | 4.2 | 3.8 | 1.6 | 2.2 | |
| 1999 | 1.8 | 2.8 | 3.2 | 2.7 | 3.6 | 5.3 | 3.8 | 4.8 | 5.8 | 4.7 | 3.2 | 1.8 | 3.1 | 5.3 | 2.8 | 4.8 | 4.4 | 2.5 | 3.1 | |
| 2000 | 1.3 | 2.2 | 2.6 | 2.1 | 2.9 | 4.8 | 3.1 | 4.1 | 4.2 | 3.8 | 2.3 | 8.3 | 2.2 | 4.7 | 1.9 | 3.6 | 3.2 | 1.3 | 1.7 | |
| 2001 | 1.2 | 2.8 | 2.4 | 1.9 | 2.7 | 4.3 | 2.9 | 3.8 | 3.9 | 3.5 | 2.1 | 8.1 | 1.8 | 3.8 | 1.8 | 3.2 | 2.8 | 1.8 | 1.4 | |
| 2002 | 8.8 | 1.7 | 2.1 | 1.8 | 2.4 | 3.8 | 2.5 | 3.4 | 3.5 | 3.1 | 1.7 | -8.2 | 1.5 | 3.3 | 1.1 | 2.6 | 2.2 | 8.5 | 8.8 | |
| 2003 | 2.2 | 3.8 | 3.4 | 3.8 | 3.8 | 5.3 | 4.8 | 4.9 | 5.8 | 4.7 | 3.5 | 1.7 | 3.4 | 5.3 | 3.3 | 4.8 | 4.6 | 3.1 | 1.6 | |
| 2004 | 2.9 | 3.7 | 4.1 | 3.7 | 4.5 | 6.8 | 4.8 | 5.7 | 5.8 | 5.6 | 4.4 | 2.7 | 4.4 | 6.2 | 4.4 | 5.8 | 5.7 | 4.4 | 4.9 | |
| 2005 | 3.2 | 4.8 | 4.3 | 4.6 | 4.8 | 6.2 | 5.1 | 5.9 | 6.1 | 5.8 | 4.7 | 3.1 | 4.8 | 8.5 | 4.8 | 6.2 | 6.1 | 4.8 | 5.3 | |
| 2006 | 3.8 | 4.6 | 5.8 | 4.6 | 5.4 | 6.8 | 5.8 | 6.6 | 6.8 | 6.8 | 5.5 | 4.1 | 5.6 | 7.4 | 5.7 | 7.2 | 7.1 | 5.9 | 6.5 | |

Morningstar—International Cost of Capital Report

International Cost of Capital Report 2008

International Cost of Capital Models

| Country | Country Risk Rating | | Country Spread | International CAPM Model | Market-Neutral CAPM | Relative Technical | | Available Country Information |
|------------------------------|---------------------|--------------|----------------|--------------------------|---------------------|--------------------|----------------|-------------------------------|
| | Big Model | Linear Model | | | | Discount Model | Dividend Model | |
| Algeria | 40.82 | 34.36 | | | | | | 2 |
| Algeria | 37.40 | 32.74 | | | | | | 2 |
| Algeria | 39.40 | 33.25 | | | | | | 2 |
| Algeria | 37.57 | 33.47 | 21.24 | 19.40 | 18.07 | 20.69 | | 9 |
| Armenia | 34.82 | 33.87 | | | | | | 2 |
| Australia | 4.89 | 8.56 | | 13.93 | | 12.28 | | 4 |
| Austria | 9.17 | 8.99 | | 18.47 | | 12.28 | | 4 |
| Azerbaijan | 37.23 | 32.89 | | | | | | 2 |
| Bahrain | 19.07 | 18.71 | | | | | | 2 |
| Bahrain | 19.28 | 18.54 | | | | | | 2 |
| Bangladesh | 33.13 | 28.99 | | | | | | 2 |
| Barbados | 18.33 | 17.19 | | | | | | 2 |
| Belize | 29.03 | 18.54 | | | | | | 2 |
| Belgium | 9.00 | 8.17 | | 10.86 | | 11.80 | | 4 |
| Belize | 12.44 | 18.16 | | | | | | 2 |
| Belize | 12.39 | 18.26 | | | | | | 2 |
| Belize | 12.44 | 18.45 | | | | | | 2 |
| Belize & Montserrat | 12.34 | 17.20 | | | | | | 2 |
| Bhutan | 19.84 | 19.66 | | | | | | 2 |
| Brazil | 25.89 | 17.38 | 13.38 | 14.40 | 27.58 | 27.52 | | 9 |
| Bulgaria | 18.33 | 19.19 | | | | | | 2 |
| Burkina Faso | 33.68 | 29.38 | | | | | | 2 |
| Burundi | 44.13 | 29.33 | | | | | | 2 |
| Cameroon | 21.78 | 19.91 | | | | | | 2 |
| Cameroon | 21.46 | 19.83 | | | | | | 2 |
| Canada | 8.89 | 7.89 | | 12.21 | | 11.26 | | 4 |
| Costa Rica | 21.76 | 20.87 | | | | | | 2 |
| Central African Republic | 41.25 | 32.98 | | | | | | 2 |
| Chad | 41.48 | 32.78 | | | | | | 2 |
| Chile | 12.42 | 12.19 | | 16.85 | 13.68 | 11.29 | | 2 |
| China | 12.75 | 13.63 | 14.28 | 12.23 | | 17.86 | | 4 |
| Colombia | 14.45 | 12.18 | | 12.23 | | 15.29 | | 2 |
| Comoros | 46.41 | 32.15 | | | | | | 2 |
| Congo | 28.01 | 31.37 | | | | | | 2 |
| Costa Rica | 19.75 | 19.74 | | | | | | 2 |
| Cote d'Ivoire | 37.89 | 31.28 | | | | | | 2 |
| Cuba | 11.82 | 14.16 | | | | | | 2 |
| Cuba | 12.26 | 12.76 | | | | | | 2 |
| Cyprus | 12.44 | 13.34 | | | | | | 2 |
| Czech Republic | 12.28 | 12.44 | | 12.85 | | 16.84 | | 4 |
| Dem. Republic of Congo (Kin) | 48.58 | 38.38 | | | | | | 2 |
| Dominican Republic | 9.74 | 7.83 | | 12.72 | | 11.16 | | 4 |
| Dominican Republic | 24.79 | 22.34 | | | | | | 2 |
| Dominican Republic | 25.76 | 18.18 | | | | | | 2 |
| East Timor | 38.38 | 31.38 | | | | | | 2 |
| Ecuador | 32.37 | 28.29 | | | | | | 2 |
| Egypt | 28.89 | 27.16 | | | | | | 2 |
| El Salvador | 21.28 | 22.71 | 12.21 | | | | | 2 |
| Equatorial Guinea | 28.28 | 28.16 | | | | | | 2 |
| Eritrea | 48.88 | 32.27 | | | | | | 2 |
| Estonia | 12.28 | 11.88 | | | | | | 2 |
| Ethiopia | 38.32 | 33.19 | | | | | | 2 |
| Fiji | 28.15 | 28.49 | | | | | | 2 |
| Finland | 6.72 | 7.76 | | 12.27 | | 12.24 | | 4 |
| France | 8.89 | 8.89 | | 12.84 | | 12.44 | | 4 |
| France | 28.32 | 28.45 | | | | | | 2 |
| France | 28.32 | 28.47 | | | | | | 2 |
| Georgia | 28.28 | 27.31 | | | | | | 2 |

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Sources and Uses of Available Cost of Capital Data

Summary and Conclusion

- This is the first in a series of AICPA FVS cost of capital Webinar series presentations.
- Both valuation analysts and damages analysts should be familiar with the various sources of data that may be used for estimating the various cost of capital components.
- Analysts should know the differences between these generally accepted sources of data—in order to select the best source of data for the particular subject valuation or damages analysis.
- This presentation summarized some of these cost of capital data source differences.
- Questions and discussion