The hardcover *Valuation Handbook – Guide to Cost of Capital* includes two essential valuation data sets:

- The CRSP Decile Size Premia Study (this includes the data previously available in the Morningstar/Ibbotson *SBBI Valuation Yearbook*)

- Risk Premium Report Study.

The Risk Premium Calculator is the online companion application for the hardcover *Valuation Handbook*, and can be used to estimate cost of equity capital (i.e., discount rate, expected return, required return) using both the Build-up method and the capital asset pricing model (CAPM). This document is a user guide for the CRSP Decile Size Premia Study module of the Risk Premium Calculator.
CRSP Deciles Size Premia Study Module

The CRSP Deciles data is an online companion application to the hardcover *Valuation Handbook – Guide to Cost of Capital’s “CRSP Deciles Size Premia Study”* exhibits. The *Valuation Handbook’s* CRSP Deciles Size Premia Study exhibits include the critical year-end valuation data previously published in the Morningstar/Ibbotson *SBBI Valuation Yearbook* (Morningstar announced in 2013 that it will no longer publish the Ibbotson *SBBI Valuation Yearbook*).

The CRSP Deciles data helps valuation analysts use the *Valuation Handbook’s* data as efficiently as possible. The Calculator provides estimated cost of equity capital using both the Build-up method and the capital asset pricing model (CAPM). The CRSP Deciles data is easy to use, saves time, and provides full summary output in both Microsoft Word and Microsoft Excel format.

**Calculator Features**

- Anytime, anywhere access at [www.bvmarketdata.com](http://www.bvmarketdata.com)
- Easy to use / Saves time / Reduces errors
- Provides automatic output:
  - **Executive Summary (in Word format):** The Executive Summary is a high-level overview of data sourcing information, key inputs used in calculations, and cost of equity capital (COE) estimates for all models employed (with your subject company’s information plugged into each model’s equation), plus a concluded range of cost of equity capital estimates.
  - **Support and Detail workbook (in Excel format):** The Support and Detail workbook includes a complete documentation of calculations and inputs for each of the models used to estimate the cost of equity capital.
**Calculator Steps**

Duff & Phelps designed the Risk Premium Calculator with two simple goals: the user experience had to be as easy and smooth as possible, and the Calculator had to maintain the same analytical horsepower, data, and methodology “under the hood” as is found in the *Valuation Handbook*.

There are three simple steps needed to calculate cost of equity capital using the Calculator.

1. **Log in**
   - Go to www.bvmarketdata.com and log in

2. **Enter Inputs**
   - Receive Outputs
     - Executive Summary in Microsoft Word format
     - Support and Detail workbook in Microsoft Excel format

Note that at any step in the process, you can go back and change any input.

**Step 1a:** Go to www.bvmarketdata.com and log in

**Image 1**— Screenshot of www.bvmarketdata.com website page
Step 1b: Select “CRSP Deciles Size Premia data”\(^1\)

Note that the Calculator provides information and tips which appear if you hover your mouse cursor over one of the information icons. These helpful tips provide quick assistance when you need it.

Image 2 – Risk Premium Calculator

---

\(^1\) The Risk Premium Calculator includes two valuation data sets: (i) the CRSP Decile Size Premia Study (this includes the data previously available in the Morningstar/Ibbotson SBBI Valuation Yearbook), and (ii) the Risk Premium Report Study (this includes the data previously published in the Duff & Phelps Risk Premium Report (the Duff & Phelps Risk Premium Report is no longer published as a stand-alone publication). This User’s Guide is for the CRSP Decile Size Study data set.
Step 2a: Enter your subject company’s name and the valuation date.

Image 3 – Subject Company Name and Valuation Date
Step 2b: Enter general inputs.

Image 4 – General Inputs (not filled out in image below)
Step 2c: Select the desired equity risk premium (ERP).

Note that the correct long-term historical ERP, supply-side ERP, and Duff & Phelps Recommended ERP value will auto-fill in the ERP field. If you choose to use your own custom ERP, chose ‘Other’ and type in the ERP.

Image 5 – Select Equity Risk Premium (ERP)
Step 2d: Risk-free rate.

Note that the appropriate long-term risk-free rate for the valuation date is automatically looked up and auto-filled in the “Risk-free Rate” field. If you want to use a different risk-free rate, just type over the value that the in the field. Note, if you selected the Duff & Phelps Recommended ERP, the corresponding risk-free rate field cannot be overwritten.\(^3\)

Image 6 – Risk-free Rate

---

\(^2\) Source: 20-year constant maturity Treasury bond yield as of valuation date from the Board of Governors of the Federal Reserve System website at http://www.federalreserve.gov/releases/h15/data.htm

\(^3\) The risk-free rate can be overwritten in all cases, except if the Duff & Phelps Recommended ERP is selected. The Duff & Phelps ERP is developed relative to, and should be used in conjunction with, a specific risk-free rate which will auto-fill in the Risk-free Rate field. To learn more about the Duff & Phelps Recommended ERP, visit www.duffandphelps.com/CostofCapital
**Step 2e: Beta (for use in CAPM)**

If you do not enter a Beta, then a cost of equity capital estimate using the CAPM cannot be calculated.

**Image 7 – Beta**

![Risk Premium Calculator](image)

<table>
<thead>
<tr>
<th>CRSP Decile</th>
<th>Market Capitalization of Smallest Company (in $millions)</th>
<th>Market Capitalization of Largest Company (in $millions)</th>
<th>Size Premium (RP2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-Cap (Decile 3-5)</td>
<td>2,432.888</td>
<td>9,196.480</td>
<td>1.11%</td>
</tr>
<tr>
<td>Low-Cap (Decile 6-8)</td>
<td>636.747</td>
<td>2,431.229</td>
<td>1.98%</td>
</tr>
<tr>
<td>Micro-Cap (Decile 9-10)</td>
<td>2.395</td>
<td>632.770</td>
<td>3.87%</td>
</tr>
<tr>
<td>Decile 1-Largest</td>
<td>21,753.411</td>
<td>428,699.798</td>
<td>-0.37%</td>
</tr>
<tr>
<td>Decile 2</td>
<td>9,196.656</td>
<td>21,739.006</td>
<td>0.75%</td>
</tr>
<tr>
<td>Decile 3</td>
<td>5,572.648</td>
<td>9,196.480</td>
<td>0.86%</td>
</tr>
<tr>
<td>Decile 4</td>
<td>3,581.547</td>
<td>5,569.840</td>
<td>1.16%</td>
</tr>
<tr>
<td>Decile 5</td>
<td>2,432.888</td>
<td>3,573.079</td>
<td>1.75%</td>
</tr>
<tr>
<td>Decile 6</td>
<td>1,626.386</td>
<td>2,431.229</td>
<td>1.86%</td>
</tr>
<tr>
<td>Decile 7</td>
<td>1,056.204</td>
<td>1,621.792</td>
<td>1.94%</td>
</tr>
<tr>
<td>Decile 8</td>
<td>636.747</td>
<td>1,055.320</td>
<td>2.36%</td>
</tr>
<tr>
<td>Decile 9</td>
<td>339.987</td>
<td>632.770</td>
<td>2.81%</td>
</tr>
<tr>
<td>Decile 10-Smallest</td>
<td>2.395</td>
<td>338.829</td>
<td>5.99%</td>
</tr>
<tr>
<td>Decile 10a</td>
<td>184.928</td>
<td>338.829</td>
<td>4.40%</td>
</tr>
<tr>
<td>Decile 10w</td>
<td>250.656</td>
<td>338.829</td>
<td>3.52%</td>
</tr>
<tr>
<td>Decile 10x</td>
<td>184.928</td>
<td>250.532</td>
<td>5.67%</td>
</tr>
<tr>
<td>Decile 10b</td>
<td>2.395</td>
<td>184.865</td>
<td>8.99%</td>
</tr>
<tr>
<td>Decile 10y</td>
<td>100.933</td>
<td>184.865</td>
<td>7.55%</td>
</tr>
<tr>
<td>Decile 10z</td>
<td>2.395</td>
<td>100.821</td>
<td>12.12%</td>
</tr>
</tbody>
</table>
**Step 2f: Industry Risk Premia (for use in the Build-up method)**

Select the appropriate Standard Industrial Classification (SIC) Code for the subject company. The full-information beta and industry risk premia for the selected industry will auto-fill in their respective fields. The industry risk premium is custom calculated using (i) the full-information beta of the industry, and (ii) depending on the ERP that was selected in Step 2c.

If you do not select an SIC, an industry risk premium cannot be calculated, and a cost of equity capital estimate using the Build-up method cannot be calculated.

**Image 8 – Industry SIC Code**
Step 2g: Next, select the appropriate Decile for the size premium based on your subject company’s characteristics.

Image 9 – Select Appropriate Size Premium

Once you are satisfied with your inputs, click the “Next” button at the bottom.
**Step 2h:** Prior to calculating COE estimates for your subject company, the Calculator displays summary of all your inputs as shown in Image 10. At this point you can review your inputs and change them (if necessary).

By clicking the “Confirm” button, you are agreeing that all of your inputs are as you intended, and the Calculator then calculates cost of equity capital (COE) estimates for your subject company.

**Image 10 – Confirm/Change Inputs**
After the Calculator calculates estimates of the subject company’s cost of equity capital (COE), an abbreviated online “results preview” is displayed, as shown in Image 11.

**Image 11 – Cost of Equity Capital (COE) Estimates (online “results preview”)**

Your complete (as opposed to online “results preview”) estimated cost of equity capital report includes an “Executive Summary” in Microsoft Word format and a “Support and Detail” Microsoft Excel workbook, which can be instantly downloaded by clicking on the “DOCX” and “XLSX” links at the top of the online “results preview” page as indicated in Image 11. Alternatively, you can choose to have your results emailed to you.
Product Purchasing Information

You can purchase the Duff and Phelps Risk Premium Calculator through Business Valuation Resources (BVR) at:

www.bvresources.com/costofcapital

1-(503) 291 7963 ext. 2

1 Year Subscription: $619.00

All purchases include:

- Unlimited access to both Duff & Phelps Risk Premium Calculator datasets (Risk Premium Report Study and CRSP Deciles Size Premia);
- 3 quarterly updates (in PDF format); and
- 4 quarterly Duff & Phelps Update email with tips and timely news.