

## Developing the Cost of Equity: Ibbotson Associates vs. Duff & Phelps

A Roger by any other name would smell as sweet. With deference to Shakespeare, I am, of course, referring to Roger Ibbotson of Ibbotson Associates, Inc. ("IA") and Roger Grabowski of Duff & Phelps, LLC ("DP"). These gentlemen are the forces of nature behind the cost of capital information valuation analysts and others rely on every day. Morningstar publishes the annual *Stocks, Bonds, Bills, and Inflation*® and DP publishes its annual Duff & Phelps, LLC *Risk Premium Report* on the website (<http://corporate.morningstar.com/ib/html/home.htm>).<sup>1</sup>

Like many analysts, I started out using only the IA data to develop an equity discount rate. When the DP data was first published, I read it primarily out of intellectual curiosity. Then I started using the DP data in my valuations and, for the work done by our firm, I have generally found it to be the superior alternative. That said, the purpose of this article is not to convince anyone to switch; rather, it is to simply highlight the pros and cons of each data source from a user perspective. Note: All statistics and references are to the 2006 IA book

(*Valuation Edition*) and 2006 DP report unless otherwise stated.

### 1. Release Date.

The opening nod goes to IA. Its book is available in early March, two months or so after the latest calendar year-end that you need the data for. DP's report is generally not published until late summer, leaving one to rely on the prior year's report for many months until the updated report comes out. This factor is only somewhat mitigated by the fact that, because of the large number of years/observations in each source's data series, the equity risk premium does not change materially from year to year.

### 2. Use with BUM or MCAPM

Information from both sources is presented in a manner that permits one to calculate the cost of equity using the simple build-up model (BUM) or the modified capital asset pricing model (MCAPM). Both IA and DP allow appraisers to incorporate either the small stock premium (non-beta adjusted small stock premium) or size premium (beta-adjusted size premium) into the respective cost of equity computations. One important note is that the DP beta-adjusted size premiums are calculated using sum-betas. Comparable IA beta-adjusted size premiums are available in Table 7-10.<sup>2</sup> DP also allows analysts to directly use a "total" risk premium in excess of the risk-free rate, which includes the market equity risk premium and the size premium.

### 3. Equity Risk Premium

IA's measure of the historical equity risk premium ("ERP") goes back to 1926. The DP measure of the historical ERP starts in 1963.<sup>3</sup> If you are in the business of valuation, you



**ROD P. BURKERT,**  
CPA/ABV, CVA, MBA

Burkert Valuation Advisors, LLC  
Philadelphia, PA  
[rod.burkert@burkertvaluation.com](mailto:rod.burkert@burkertvaluation.com)

would have to be living in a cave<sup>4</sup> not to notice the ongoing debate regarding the best estimate of the forward-looking ERP. The IA ERP for the 1926-2005 period is 7.1 percent (6.3 percent measured on the supply side). In a recent article, Roger Grabowski posits that "any reasonable long-term estimate of the normal ERP as of 2006 should be in the range of 3.5 percent to 6 percent." [emphasis in the original]<sup>5</sup> Interestingly, the historical ERP for the 1963-2005 period is 4.81 percent. So by using the DP report, analysts have to address the debate of whether the IA historical ERP is potentially too high an estimate for the forward-looking ERP.

### 4. Company Strata

The universe of reported-on companies is broken down into 10 deciles by IA and into 25 portfolios by DP. If you need to value a "small" company, you start in the IA 10th decile, where the average market capitalization is \$124 million.<sup>6</sup> The 10th decile includes large companies (measured by assets, sales, or operating income) that may have a low equity value because they are highly leveraged or that have low stock prices, so-called "fallen angels." In the DP 25th portfolio, the companies have an average market capitalization of \$76 million. DP's portfolios are limited to companies with a track record of profitable performance, and a separate "high financial risk" port-

*Continued on next page*



folio was created for companies that are losing money, have high leverage, or are in bankruptcy.

**5. Measures of Company Size**

IA provides historical ERP information for 10 size-ranked deciles using one measure of size: market capitalization. DP provides historical ERP for 25 size-ranked portfolios using eight measures of size: market value of equity, book value of equity, 5-year average net income, market value of invested capital, total assets, 5-year average EBITDA, sales, and number of employees. DP allows appraisers to focus directly on financial variables that may be more closely associated with small size than market capitalization.

**6. Other Analytics**

DP gives appraisers other tools to analyze ERP rather than just taking the numbers off of the table; IA does not. For example, the DP report provides a regression equation for all eight measures of size so that one can extrapolate the ERP to the subject company for each size measure.<sup>7</sup> This may allow one to consider and defend fewer factors that go into the subjectively deter-

mined specific company risk premium because the effect of some/all of the specific company factors would be reflected in the extrapolated ERP. Thus, a smaller, less contentious specific company risk premium could be utilized in cost of equity calculations. DP also provides appraisers with information to adjust the observed premiums over the riskless rate for differences in financial leverage (i.e., unlevering and relevering) between the average companies comprising the portfolio and the subject company.

So there you have it. Below is a table that summarizes the comparison. I greatly encourage you to do your own investigation so that, given the practical alternatives, you can choose the data source that better fits the facts and circumstances of your particular valuation assignment. 

**expert TIP**

**While the Ibbotson Associates and Duff & Phelps data have strengths and weaknesses, many analysts are still using both.** 

**SUMMARY**

	<u>IA</u>	<u>DP</u>
<b>1. Release date</b>	X	
<b>2. Use with Build-Up or MCAPM</b>	X	X
<b>3. Equity risk premium</b>		X
<b>4. Company strata</b>		X
<b>5. Measures of company size</b>		X
<b>6. Other analytics</b>		X

<sup>1</sup> Roger Grabowski and David King's work was published by/through Standard & Poor's Corporate Valuation Consulting between 2001 and 2005, PricewaterhouseCoopers for 1999 and 2000, and Price Waterhouse between 1995 and 1998. Yes, Messrs. Grabowski and King's first report harks back to December 31, 1994.

<sup>2</sup> See pp. 115-122 of IA's Valuation Edition for a description of beta adjustment methodologies and the sum-beta method.

<sup>3</sup> The year Standard & Poor's Compustat database was inaugurated.

<sup>4</sup> Apologies to the Geico commercial cavemen.

<sup>5</sup> Grabowski, Roger, "Equity Risk Premium: 2006 Update," *CPA Expert* (Summer 2006), pp.7-12.

<sup>6</sup> Per p. 130: \$216,334,858,000 10th decile market capitalization ÷ 1,746 10th decile companies.

<sup>7</sup> DP warns that "as a general rule one should be cautious about extrapolating a statistical relationship far beyond the range of the data used in the statistical analysis."