Examples Using Data in the Risk Premium Report – Risk Study

The following are examples of using the data in the Risk Premium Report – Risk Study in estimating the risk premia for use in the build-up method.

Using the Guideline Portfolio Method in the Build-up Method.

Estimation of the discount rate for a company using the build-up method as the sum of the risk-free rate as of the valuation date and the smoothed risk premium over the risk-free rate for the portfolio closest in size to the subject company. For instance, assuming that the spot risk-free rate as of the valuation date (December 31, 2019) is 2.25%, a simple build-up method estimate of cost of equity capital for a company with an operating margin of 1.0% (placing it in portfolio 25 in Exhibit 11–12) would result in:

$$E(R) \quad = \quad R_f + RP_{M+S(levered)} \text{ for subject company with operating margin of 1\%}$$
$$= \quad 2.25\% + 15.02\%$$
$$= \quad 17.27\%$$

Regression Equation Method.

Extrapolation of the smoothed risk premium for a company. The availability of the regression equation and the use of it in this manner become very useful when the accounting measure of company risk of the subject company is smaller than that of the smallest portfolio. The average operating margin of companies in portfolio

25 in Exhibit 11–12 is 2%.[1,2] For a company with an operating margin of 1%, the regression equation in Exhibit 11–12 allows estimation of the smoothed risk premium over the risk-free rate as follows:[3]

$$\textit{Smoothed Premium} \quad = \quad \textit{4.205\% – 6.366\% * Log(Operating Margin in percent)}$$
$$= \quad \textit{4.205\% – 6.366\% * Log(1\%)}$$

$$= \quad \textit{4.205\% – 6.366\% * (-2)}$$

$$= \quad \textit{4.205\% – (-12.73)}$$

$$= \quad \textit{16.94\%}$$

Calculation of the cost of equity capital using the smoothed risk premium over the risk-free rate derived using the regression equation method (14.91%) is therefore:

$$E(R) \quad = \quad R_f + RP_{M+S(levered)} \textit{ for subject company with operating margin of 1\%}$$
$$= \quad \textit{2.25\% + 16.94\%}$$
$$= \quad \textit{19.19\%}$$

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[1] The upper and lower bounds for each of the 25 portfolios is shown in Exhibit 11–12; "Average operating margin" is not shown. Average operating margin (and additional statistics) about the Risk Premium Report's Risk Study portfolios are available in the Resources section of the Cost of Capital Navigator's U.S. Cost of Capital Module.

[2] The 1% operating margin of the subject company used in this example is less than the average operating margin of the companies in portfolio 25 of 2%) used to calculate the "guideline portfolio method" risk premium over the risk-free rate (15.02%) used in the previous example. One would therefore expect the more exact regression equation calculation to produce a risk premium over the risk-free rate greater than 15.02%, given the inverse relationship between operating margin and required return.

[3] The asterisk (*) is used in Microsoft Excel as the symbol for multiplication. The regression formulas associated with each of the Risk Premium Report Study portfolios are reported in the Cost of Capital Navigator's U.S. Cost of Capital Module using the Microsoft Excel asterisk as the symbol for multiplication, and so it is used here also.