**Valuation: Measuring and Managing the Value of Companies**

**Henkel Integrative Case: Part IV**

Cost of Capital

**Introduction**

To value a company using enterprise DCF, we discount free cash flow by the weighted average cost of capital (WACC). The weighted average cost of capital represents the opportunity cost that investors face for investing their funds in one particular business instead of others with similar risk. To determine the weighted average cost of capital, calculate its three components: the cost of equity, the after-tax cost of debt, and the company’s target capital structure. Since none of the variables are directly observable, we employ various models, assumptions, and approximations to estimate each component.

**Instructions**

**The cost of equity** is built on the three factors: the risk-free rate, the market risk premium, and a company-specific risk adjustment. The most commonly used model for this estimate is the capital asset pricing model (CAPM). To determine the CAPM, we need to estimate a risk free rate, the market risk premium, and the market beta.

1. To determine the risk free rate, please use Treasury data from the “Select Market Data” spreadsheet. On the “Yields” tab, you will find yield-to-maturities for U.S. and German treasury rates. For Henkel AG, which treasury rate at which maturity is most appropriate to value the company?
2. To determine Henkel’s corporate beta, unlever (and relever) the OLS market betas for each company in the European Household and Personal Care segment. Prices can be found on the “Prices” tab of the “Select Market Data” spreadsheet. To determine OLS market beta, regress 10-year monthly returns against the MSCI World index denominated in the same currency. In excel, this can be done using the “SLOPE” formula. Next, unlever the market beta using each company’s year-end debt-to-equity and the formula: bu = be / (1 + D/E). To determine Henkel’s corporate beta, relever the average industry beta using Henkel’s year-end debt-to-equity ratio. Repeat this process for each of Henkel’s divisions.
3. Assume the market risk premium equals 5%.

Henkel does not carry debt beyond five years. Therefore, we determine **the after-tax cost of debt** using a portfolio of similarly rated bonds. To determine the cost of debt:

1. Use the same risk free rate used to determine the cost of equity.
2. Add a default premium based on the company’s debt rating by Standard & Poors. Yields by credit rating can be found on the “Yields” worksheet of the “Select Market Data” spreadsheet. Henkel reports its debt rating on its investor relations website: <http://www.henkel.com/investor-relations/credit-ratings-11952.htm>. If the company’s rating is between reported portfolios, interpolate between the nearest ratings.
3. To determine Henkel’s marginal tax rate, use the tax reconciliation table in the annual report. Set the marginal tax rate equal to the “Tax rate on income.”

To complete the cost of capital, weight the after-tax cost of debt and cost of equity using the company’s year-end capital structure (found in the “Select Market Data” spreadsheet).

**Helpful page locations, Henkel 2009 Annual Report**

* Taxes on income (the tax reconciliation table) can be found in note 9 starting on page 92.

**Required Spreadsheets**

* Select Market Data