Corporate Finance, Module 16, “Debt Policy”

Homework

(The attached PDF file has better formatting.)

The risk-free interest rate ($r_{f)}$ is 10%, the expected return on the market portfolio ($E[r_m]$) is 18%, and a firm’s debt-to-equity ratio is 100%, so debt and equity each comprise 50% of capital. Assume the corporate tax rate is zero.

If the cost of debt capital (r_d) is 12% and the beta of equity (β_e) is 1.500, what are

A. The cost of equity capital? (Use the CAPM equation: $r_e = r_f + \beta_e \times [E(r_m) – r_f]$.)
B. The beta of debt? (Apply the CAPM equation to the debt, and back out the beta of debt from the cost of debt capital.)
C. The expected return on assets? (A weighted average of the cost of equity capital and the cost of debt capital, where the weights are the market values of each.)
D. The beta of assets? (Use a weighted average of the beta of debt and the beta of equity, or back out the beta of assets from the return on assets.)