Universidad de Barcelona

3rd course: Financial Management *Professor: Altina Sebastián González*

Exercises Topic 8: Capital Structure and Cost of Capital

1. The capital structure of the firm can be defined as
   A. the firm's mix of different debt securities.
   B. the firm's mix of different securities used to finance assets.
   C. the market imperfection that the firm's managers can exploit.
   D. the firm's mix of different debt securities, the firm's mix of different securities used to finance assets, and the market imperfection that the firm's managers can exploit.

2. Which of the following sentences is **TRUE**?
   A. The cost of capital for a firm, WACC, in a tax-free environment is equal to the market value weighted average of the return on equity and the return on debt.
   B. Most investors like uncertainty.
   C. The beta coefficient measures de return of a risk-free asset
   D. The return on equity is always lower than the return on debt

3. A firm has a debt-to-equity ratio of 1. If it had no debt, its cost of equity would be 12 percent. Its cost of debt is 9 percent. What is its cost of equity if there are no taxes?
   A. 21 percent
   B. 18 percent
   C. 15 percent
   D. 16 percent

4. A firm has a debt-to-equity ratio of 0.50. Its cost of debt is 10 percent. Its overall cost of capital is 14 percent. What is its cost of equity if there are no taxes?
   A. 13 percent
   B. 16 percent
   C. 15 percent
   D. 18 percent

5. A firm is unlevered and has a cost of equity capital of 9 percent. What is the cost of equity if the firm becomes levered at a debt-equity ratio of 2? The expected cost of debt is 7 percent. (Assume no taxes.)
   A. 15 percent
   B. 16 percent
   C. 14,5 percent
   D. 13 percent

$WACC \rightarrow K_d(1-t)\left(\frac{d}{e+d}\right)+K_e\left(\frac{d}{e+d}\right)$

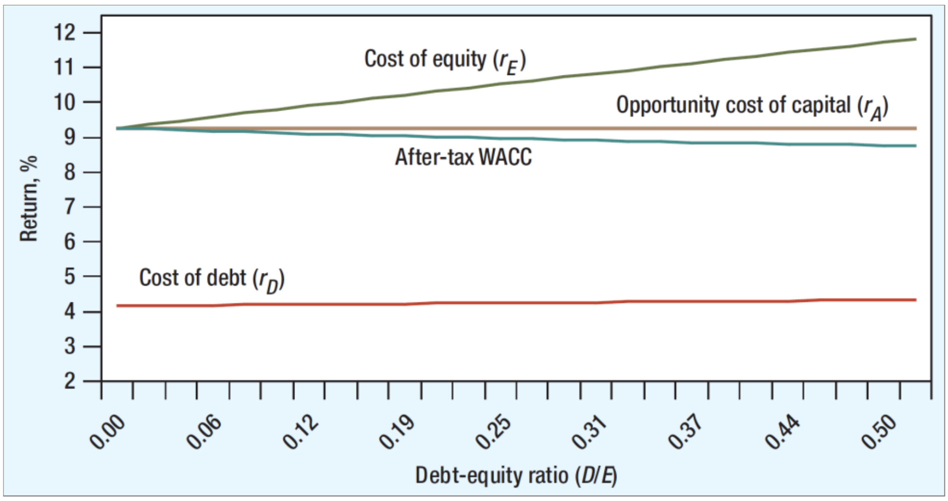
6. Suppose the beta of Exxon-Mobil is 0.65, the risk-free rate is 4 percent, and the expected market rate of return is 14 percent. Calculate the expected rate of return on Exxon-Mobil.
   A. 12,6 percent
   B. 10,5 percent
   C. 13,1 percent
   D. 6,5 percent

7. Union Pacific has a marginal tax rate of 35%. The cost of equity is 12% and the pretax cost of debt is 6%. Given the company market value balance sheets, what is the tax adjusted WACC?

Balance Sheet (Market Value, billions)			
Assets	32,9	6,7	Debt
		26,2	Equity
Total assets	32,9	32,9	Total liabilities

   A. 12%
   B. 9%
   C. 10,4%
   D. None of the above

8. According to the graph of WACC for Union Pacific, which of the following is (are) true?
   A. The cost of equity is an increasing function of the debt-equity ratio.
   B. The cost of equity is an increasing function of the debt-equity ratio, and the cost of debt is an increasing function of the debt-equity ratio.
   C. The weighted average cost of capital (WACC) is a decreasing function of the debt-equity ratio.
   D. The cost of equity is an increasing function of the debt-equity ratio, the cost of debt is an increasing function of the debt-equity ratio, and the weighted average cost of capital (WACC) is a decreasing function of the debt-equity ratio.



9. Assume the following data for U&P Company: Debt (D) = $100 million; Equity (E) = $300 million; rD = 6%; rE = 12%; and TC = 30%. Calculate the after-tax weighted average cost of capital (WACC):
   A. 10,5%
   B. 15%
   C. 10,05%
   D. 9,45%

10. One would expect a stock with a beta of zero to have a rate of return equal to
   A. zero.
   B. the market risk premium
   C. the risk-free rate
   D. the market rate of return