The Cost of Capital

The Cost of Capital

- What are the sources of capital?

- What is the cost of capital?
  - The cost of capital reflects the investment opportunities and alternatives in the financial market available to suppliers of the firm's capital.

The Cost of Capital

- *Which* cost of capital?

- How do we calculate the cost of capital?

The Cost of Common Stock

- There are two ways:

    1.

    2.

The Dividend Growth Model

- Recall:

- Therefore,

- R_E is the required return on equity, or the cost of equity capital.

Dividend Growth Model Example

- Brian's Burritos just paid a $2.00 dividend, which it expects to grow at 5% per year indefinitely. If the current price of this stock is $25, what is Brian's cost of equity capital?

The Dividend Growth Model

- <u>Problem</u>: We know what the price of the stock is today and we know what the most recent dividend was. We seldom know the growth rate.

- <u>Potential Solutions</u>:
  1)
  2)
  3)

The Capital Asset Pricing Model (CAPM)

- Recall:

- We know the average historical risk premium and can look-up the risk-free rate (e.g., U.S. Treasury bills). We also can calculate or look up betas.

- Problem:

The Cost of Preferred Stock

- What do we know about the dividends of preferred stock?

- Recall:

- Therefore:

The Cost of Debt

- The cost of debt is the return that the firm's creditors demand on _____ borrowing.

- How do we get it?

- Recall:
  - Coupon Rate
  - Current Yield
  - Yield to Maturity

The Weighted Average Cost of Capital (WACC)

- Recall from the balance sheet:

- We are also interested in _____ cash flows.

- One benefit of debt (not available to equity) is the fact that interest payments are _____.

The After-tax Cost of Debt

The Weighted Average Cost of Capital (WACC)

$$WACC = \left[\left(\frac{E}{D+E+P}\right) \times R_E\right] + \left[\left(\frac{P}{D+E+P}\right) \times R_P\right] + \left[\left(\frac{D}{D+E+P}\right) \times R_D \times (1-t)\right]$$

Keep in mind:

- _____ Capital Structure
- _____ Values **NOT** _____ Values

The Weighted Average Cost of Capital (WACC)

$$WACC = \left[\left(\frac{E}{D+E}\right) \times R_E\right] + \left[\left(\frac{D}{D+E}\right) \times R_D \times (1-t)\right]$$

Keep in mind:

- _____ Capital Structure
- _____ Values **NOT** _____ Values

WACC Example

- The B. B. Lean Co. has 1.4 million shares of stock outstanding. The stock currently sells for $20 per share. The firm's debt is publicly traded and was recently quoted at 93 percent of face value. It has a total face value of $5 million and it is currently priced to yield 11 percent. The risk-free rate is 8 percent and the market risk premium is 7 percent. You've estimated that Lean's stock has a beta of 0.74. If the corporate tax rate is 34 percent, what is the WACC of Lean Co.?

More on WACC

- What does the WACC measure?

- What is the WACC for a firm financed with all equity?

- WACC and Company Valuation

- How do we estimate the appropriate discount rate for a project with different risk than our company?

Another WACC Example

- As CFO of Mickey's Mullets, Inc., you are trying to determine the firm's weighted average cost of capital (WACC). You have gathered the following information: The firm has 2,000 bonds, 35,000 preferred shares, and 100,000 common shares of stock outstanding. The bonds were 20 years bonds when they were issued 2 years ago, have a 9% coupon rate, paid annually, and a $1,000 face value. The bonds currently have a yield to maturity of 6.5881%. The preferred stock pays a $5.25 annual dividend and currently has a dividend yield of 7.5%. The firm just paid a $1.20 dividend on the common stock yesterday, which has a beta of 0.95, and expects to maintain a constant 7 percent growth rate in dividends. You know the yield on short-term U.S. Treasuries is 5.3%, the historical market risk premium is 6 percent, and the firm has a marginal tax rate of 40 percent.

Chapter 14
Suggested Problems

- Concepts Review and Critical Thinking Questions:
  - 1, 4, 5 (the DCF model is the Dividend Growth Model), 7, and 8

- Questions and Problems:
  - 1, 2, 5, 7, 9, 14, 15, 16, 20, and 30 (except part e). Notice how problem 30 brings it all together (i.e., the big picture).