CHAPTER 10

CONCEPT REVIEW QUESTIONS

1. Why is using the cost of equity to discount project cash flows inappropriate when a firm uses both debt and equity in its capital structure?

The cost of equity is not appropriate because it does not correctly reflect the company's cost of financing. Capital is a resource, with a cost associated with it. The appropriate discount rate must reflect both the company's cost of debt and equity financing.

2. Two firms in the same industry have very different equity betas. Offer two reasons why this could occur.

Two firms could have very different equity betas if they have chosen differing capital structures. The firm using more debt financing will have a higher equity beta.

3. For a firm considering expansion of its existing line of business, why is the *WACC*, rather than the cost of equity, the preferred discount rate if the firm has both debt and equity in its capital structure?

If the firm is expanding its business, it most likely will finance the expansion the way the overall company is financed. If the firm's capital structure includes both debt and equity, then these costs should be reflected in the appropriate discount rate for the expansion

4. The cost of debt, r_d, is generally less than the cost of equity, r_e, because debt is a less risky security. A naive application of the *WACC* formula may suggest that a firm could lower its cost of capital (thereby raising the *NPV* of its current and future investments) by using more debt and less equity in its capital structure. Give one reason why using more debt may not lower a firm's *WACC*, even if $r_d < r_e$.

Using debt will lower the company's WACC up to a point. At some point the firm will have so much debt that lenders will perceive the firm as overly risky. The cost of new debt will be very expensive, or perhaps even impossible to obtain at any cost. At this point the risk (and costs) of bankruptcy outweigh the lower costs of debt at lower debt levels.

5. Why would a project that reaches the *breakeven point (BEP)* in terms of net income be potentially bad for shareholders?

Break-even analysis uses accounting numbers, EPS and EBIT. This does not necessarily indicate that a project is positive NPV. A project must recover its cost of capital for it to be acceptable

6. Which variable do you think would be more valuable to examine in a project *sensitivity analysis*—the growth rate of sales or the allowable depreciation deductions each year? Explain.

An analysis is probably more sensitive to changes in the growth rate of sales. Sales drive the cash flow analysis – many other variables are based on a percent of sales. While depreciation has an impact, the differences in depreciation methods allowed will not be as great as the impact of sales. In particular, sales growth will likely have a large impact on the terminal value of the project.

7. You work for an airline that is considering a proposal to offer a new, nonstop flight between Madrid and Tokyo. Senior management asks a team of analysts to run a *Monte Carlo simulation* of the project. Your job is to advise the group on what assumptions they should put in the simulation regarding the distribution of the ticket price your airline will be able to charge. How would you go about this task?

The assumptions for a Monte Carlo simulation on airline ticket prices might include:

- Capacity utilization – how many seats are likely to be sold at each pricing level (seven day advance purchase, Saturday night stay, and various other classes of tickets)
- You could take the range of ticket prices and assume the average price was a random variable taken from a normal distribution

8. Why might the discount rate vary as you move through a *decision tree?*

The discount rate could vary because parts of a project could be riskier than others. For example, typically the beginning of a project is riskier than later parts of a project. Once the firm has a history with the project, it may be better able to predict demand and costs.

9. What role does the *human element* play in the capital budgeting decision process? Could it cause a negative *NPV* project to be accepted?

Managers may consciously or unconsciously manipulate the projects they favor to show positive cash flows when in fact such results might be questionable. This optimism could cause a negative NPV project to be accepted.

10. Why must manager intuition be part of the investment-decision process regardless of a project's *NPV* or *IRR?*

Managers' intuition is useful because you must be able to explain NPV. If you have a positive NPV, then there must be valid reasons for that NPV – real competitive advantages. If a manager can break down a project into real options, he/she may see new possibilities to create and sustain competitive advantages