FIN300 Managerial Finance

Professor H. Wang

Problem Set #7

Due: Friday, 4/26, 2013

Please make sure to write clearly the <u>name</u> of each member in the group. Please turn in your solutions at the beginning of the lecture on the due date. *Late submissions or submissions by groups larger than four students will not be accepted.*

1. You have the opportunity to make an investment that costs \$900,000. If you make this investment now, you will receive \$120,000 one year from today, \$250,000 two years from today, and \$800,000 three years from today. The appropriate discount rate for this investment is 12 percent.

a. Should you make the investment?
b. What is the net present value (NPV) of this opportunity?
c. If the discount rate is 11 percent, should you invest? Compute the NPV to support your answer.

2. Lizpaz Inc. is a levered firm with a debt-to-equity ratio of 0.25. The beta of the common stock is 1.15, while the beta of the debt is 0.3. The market-risk premium is 10 percent and the risk-free rate is 6 percent. The corporate tax rate is 35 percent.

a. What is the firm's cost of equity capital?
b. If a new company project has the same risk as the overall firm, what is the weighted average cost of capital for the project?

3. Lavan Industries, Inc., is considering a new project with a \$25 million initial outlay. The project will generate after-tax (year-end) cash flows of \$7 million for five years. The firm has a debt-to-equity ratio of 0.75. The cost of equity is 15 percent and the before-tax cost of debt is 9 percent. The corporate tax rate is 35 percent. The project has the same risk as the overall firm. Should Lavan accept the project?

4. Acetate, Inc., has equity with a market value of \$20 million and debt with a market value of \$10 million. The cost of the debt is 14 percent per annum.

Treasury bills that mature in one year yield 8 percent per annum, and the expected return on the market portfolio over the next year is 18 percent. The beta of Acetate's equity is 0.9. The firm pays no taxes.

a. What is Acetate's debt-equity ratio?
b. What is the firm's weighted average cost of capital?

5. The Wendy Group is a construction firm that specializes in building educational facilities. It has been approached by a large university concerning the construction of a library. Construction of the library is expected to take 3 years. The university will pay $40 million for the library in 4 yearly payments of $10 million each, the first of which is paid immediately and the last of which is paid three years from now when the library is completed. The Wendy group has two different construction plans it can follow. Under plan A most of the costs occur in the early stages and under plan B most costs are delayed. The following table shows the costs under the two plans.

Year	*Payment Received*	**Plan A Cost**	**Plan B Cost**
0	10	17.5	2.0
1	10	5.0	1.2
2	10	6.5	7.0
3	10	9.5	32.5

(**A**) Calculate the NPV of each plan using discount rates of 5%, 10% and 12%.

(**B**) Which plan has a higher IRR? Is an IRR comparison meaningful for choosing between plans A and B? Explain your answer.