

Homework #3

BUSI 408 Summer II 2013

This assignment is due 12 July 2013 at the beginning of class. Answer each question with numbers rounded to two decimal places. For relevant questions, identify the cash flows and their timing. To receive full credit, you will need to right down the formulas underlying your answers and show your work.

1. A project that provides annual cash flows of \$17,300 for nine years costs \$79,000 today. Is this a good project if the required return is 8 percent? What if it's 20 percent? At what discount rate would you be indifferent between accepting the project and rejecting it?

2. Consider the two mutually exclusive projects detailed below and a required return on your investment of 15 percent. Which project would you choose using each of the following investment criterion: payback, discounted payback, NPV, IRR, and profitability index? Given your choices under these criteria, which project will you finally choose?

Year	Cash Flow (A)	Cash Flow (B)
0	-\$350,000	-\$50,000
1	45,000	24,000
2	65,000	22,000
3	65,000	19,500
4	440,000	14,600

3. The Yurdone Corporation wants to set up a private cemetery business. The cemetery project will provide a net cash inflow of \$97,000 for the firm during the first year, and the cash flows are projected to grow at a rate of 4 percent per year forever. The project requires an initial investment of \$1,500,000. If Yurdone requires an 11 percent return on such undertakings, should the cemetery business be started?

The company is somewhat unsure about the assumption of a 4 percent growth rate in its cash flows. At what constant growth rate would the company just break even if it still required an 11 percent return on investment?

4. Slow Ride Corp. is evaluating a project with the following cash flows:

Year	Cash Flow
0	-\$29,000
1	11,200
2	13,900
3	15,800
4	12,900
5	-9,400

The company uses a 10 percent interest rate on all of its projects. Calculate the MIRR of the project using all three methods.

5. Light Sweet Petroleum, Inc., is trying to evaluate a generation project with the following cash flows:

Year	Cash Flow
0	-\$39,000,000
1	63,000,000
2	-12,000,000

If the company requires a 12 percent return on its investments, should it accept this project? Why?

Compute the IRR for this project. How many IRRs are there? Using the IRR decision rule, should the company accept the project? What's going on here?

6. Consider the following income statement:

Sales	\$682,900
Costs	437,800
Depreciation	110,400
EBIT	<u>?</u>
Taxes (34%)	<u>?</u>
Net Income	<u><u>?</u></u>

Fill in the missing numbers and then calculate the OCF. What is the depreciation tax shield?

7. Keiper, Inc., is considering a new three-year expansion project that requires an initial fixed asset investment of \$2.7 million. The fixed asset will be depreciated straight-line to zero over its three-year tax life, after which time it will be worthless. The project is estimated to generate \$2,080,000 in annual sales, with costs of \$775,000. If the tax rate is 35 percent, what is the OCF for this project?

8. Dahlia Enterprises needs someone to supply it with 120,000 cartons of machine screws per year to support its manufacturing needs over the next five years, and you have decided to bid on the contract. It will cost you \$870,000 to install the equipment necessary to start production; you'll depreciate this cost straight-line to zero over the project's life. You estimate that, in five years, this equipment can be salvaged for \$70,000. Your fixed production costs will be \$325,000 per year and your variable production costs should be \$10.30 per carton. You also need an initial investment in NWC of \$75,000. If you tax rate is 35 percent and you require a 12 percent return on your investment, what bid price should you submit?

9. A project has the following estimated data: price = \$62 per unit; variable costs = \$41 per unit; fixed costs = \$15,500; required return = 12 percent; initial investment = \$24,000; life = four years. Ignoring the effect of taxes, what is the accounting break-even quantity? The cash break-even quantity? The financial break-even quantity? What is the degree of operating leverage at the financial break-even level of output?
10. At an output level of 15,000 units, you have calculated that the degree of operating leverage is 2.61. The operating cash flow is \$57,000 in this case. Ignoring the effect of taxes, what are fixed costs? What will the operating cash flow be if output rises to 16,000 units? If output falls to 14,000 units? What will the new degree of operating leverage be in each case?

11. A stock has had the following year-end prices and dividends:

Year	Price	Dividend
1	\$43.15	-
2	48.13	\$.45
3	57.05	.49
4	45.13	.55
5	52.05	.62
6	61.13	.68

What are the arithmetic and geometric average returns for the stock?

12. Using the following returns, calculate the arithmetic average returns, the variances, and the standard deviations for X and Y.

Year	Returns	
	X	Y
1	17%	23%
2	22	34
3	8	11
4	-15	-32
5	10	21