

Lecture Examples I

Example 2.1.a. Your company is purchasing a new piece of equipment for \$35,000 and will keep it indefinitely. For accounting purposes, the equipment will be depreciated straight-line for three years to an ending book value of \$5,000. Your company's tax rate is 35%. Forecast the cash flow stream associated with this purchase.

- b. Suppose the equipment will be scrapped at the end of year 4 for \$8,000.
- c. Suppose the equipment will be resold at the end of year 2 for \$20,000.
- d. Suppose the equipment will be scrapped at the end of year 4, but projected inflation is raised by 3% per year.

Example 2.2.a. Your company is considering adding a new product line. Projected annual unit sales and year-end inventories, in cases of product, are as follows:

| <u>Year</u> | <u>Unit Sales</u> | <u>Inv</u> |
|-------------|-------------------|------------|
| 0 | 0 | 50 |
| 1 | 500 | 150 |
| 2 | 500 | 200 |
| 3 | 500 | 100 |
| 4 | 250 | 0 |

Current wholesale and retail prices per case are \$100 and \$130, respectively. Projected inflation is zero. All purchases and sales are made in cash. Your company faces a tax rate of 35%. Forecast cash flows from the project.

- b. Suppose 10% of each year's average inventory is lost to shrinkage.
- c. Suppose shrinkage is zero, and projected inflation is 3% per year.

Example 2.3.a. You will sell \$2 million in imported cars for each of the next two years. Wholesale costs for the cars are 75% of sales, paid in cash at the time of sale. Projected inflation is zero. Receivables will be \$1 million and \$1.2 million at the end of years 1 and 2, respectively. You do not charge interest. At the end of year 3, 80% of outstanding receivables will be collected, and the remainder will be written off as bad debt. You face a tax rate of 45%. Forecast cash flows from the project.

- b. Suppose projected inflation is 5% per year.

Example 2.4. Chef Anton DeGrisse is evaluating a new restaurant project. Yearly revenues are forecast at \$3.1 million, yearly operating expenses at \$2.85 million, and working capital requirements are a steady \$150,000 beginning now. The chef anticipates closing the restaurant at the end of year 10, with zero scrap value.

For tax purposes, the \$450,000 investment will be depreciated straight-line to an ending book value of \$50,000 at the end of year 10. Chef DeGrisse faces a tax rate of 45%. Forecast Net Income and cash flows from the project.

Example 2.5. (Brealey and Myers, 2003, pp. 138-9) The following table gives yearly projections for Flanel's new perfume factory in millions of euros. Forecast cash flows from the project.

Example 3.1.a. A machine is forecasted to generate cash inflows of \$100,000 in the first year, \$200,000 in the second year and \$300,000 in the third year. The OCC for these cash flows is 12%. What is the value of this machine?

b. Suppose the machine may be purchased at a cost of \$400,000 to purchase. What is the NPV of the machine project? Should the project be accepted or rejected?

c. Reconsider the project under the assumption that cash flows from the machine are delayed by two years.

Example 3.2.a. A factory will produce a cash inflow after operating costs of \$170,000 a year for 10 years. If the OCC is 14%, what is the value of the factory?

b. Suppose instead that cash flows from the factory will continue indefinitely.

c. Suppose instead that \$170,000 is received one year from now, but thereafter cash flows decline by 5% per year for 14 more years.

d. Suppose the factory generates \$170,000 a year for 10 years, but cash flows start four years from now.

e. Suppose each year's cash receipts are spread evenly over weeks within the year.

Example 3.3. A new project will generate cash flows of \$150,000 per year for eight years. After that, cash flows will continue for 10 more years, declining at a rate of 12% per year. If the OCC is 16%, what is the value of the project?