

Quiz A: 7/22/14

Name Key

Assume the firm you work for is analyzing whether to expand its operations by building a new manufacturing facilities. Your boss has asked you to check a few numbers by using the following information to determine the incremental unlevered net income and free cash flow for the new facility both today and four years from today. Note: You only need to set up all the appropriate equations and fill in the correct numbers. You don't have to solve anything.

The new facility will require a total investment of \$118 million. Of this total, \$60 million would be spent today and \$58 million would be spent a year from today. Depreciation on the new facility will be determined using the 10-year MACRS class and would begin a year from today. The new facility will be built on land purchased five years ago for \$10 million which could be sold today for \$12 million. Market research to determine whether demand will be sufficient to support the new factory cost \$3 million. Of this total, \$2 million was paid up front a year ago and the balance of \$1 million is due today.

Sales associated with the new facility is estimated to equal \$145 million a year from today, \$142 million two years from today, \$148 million three years from today, \$151 million four years from today, and \$158 million five years from today. Cost of Goods Sold are expected to equal 45% of revenue and fixed selling and administrative costs are expected to equal \$52 million per year. Your firm's marginal tax rate equals 35%.

The incremental working capital (in millions) associated with the new facility is expected to have the following values (Note: t = 0 is today, t = 1 is one year from today, t = 2 is two years from today, t = 3 is three years from today, etc):

	t = 0	t = 1	t = 2	t = 3	t = 4	t = 5
Cash	0	9.2	9.7	11.7	10.2	8.4
A/R	0	277.4	294.5	224.2	269.7	342.7
Inventory	0	20.2	23.1	15.2	20.6	26.6
A/P	0	40.6	48.2	38.6	48.9	45.6

The facility would be funded with cash and by borrowing \$75 million from Bank of America at an annual interest rate of 4.5% per year.

$$\begin{aligned}
 &+4 / FCF_0 = 0 + 0 - CE_0 - 0 \\
 &CE_0 = 60 + (12 - (12 - 10)(.35)) \\
 &+4 / UNI_4 = (151 - .45(151) - 52 - (.1152)(118)) (1 - .35) \\
 &+4 / FCF_4 = UNI_4 + (.1152)(118) - 0 - \Delta NWC \\
 &+4 / \Delta NWC = NWC_4 - NWC_3 \\
 &+8 / NWC_4 = 10.2 + 269.7 + 20.6 - 48.9 \\
 &+8 / NWC_3 = 11.7 + 224.2 + 15.2 - 38.6
 \end{aligned}$$