

Quiz B: 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 three 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 \$16 million. Of this total, \$9 million would be spent today and \$7 million would be spent a year from today. Depreciation on the new facility will be determined using the 15-year MACRS class and would begin a year from today. The new facility will be built on land purchased five years ago for \$2 million which could be sold today for \$3 million. Market research to determine whether demand will be sufficient to support the new factory cost \$1 million. Of this total, \$600,000 was paid up front a year ago and the balance of \$400,000 is due today.

Sales associated with the new facility is estimated to equal \$135 million a year from today, \$139 million two years from today, \$138 million three years from today, \$140 million four years from today, and \$142 million five years from today. Cost of Goods Sold are expected to equal 80% of revenue and fixed selling and administrative costs are expected to equal \$16 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	3.2	2.9	3.7	3.9	3.8
A/R	0	80.2	76.8	67.1	69.1	72.7
Inventory	0	7.1	8.1	5.7	6.9	8.7
A/P	0	18.0	22.0	13.4	21.3	19.7

The facility would be funded with cash and by borrowing \$8 million from Bank of America at an annual interest rate of 3.5% per year.

$$+4 (FCF_0 = D + D - CE_0 - D)$$

$$CE_0 = 9 + (3 - (3-2)(.35))$$

$$+4 (UNI_3 = (138 - .8(138) - 16 - .0855(16)) (1 - .35))$$

$$+4 (FCF_3 = UNI_3 + .0855(16) - D - \Delta NWC)$$

$$+4 (\Delta NWC = NWC_3 - NWC_2)$$

$$+8 (NWC_3 = 3.7 + 67.1 + 5.7 - 13.4)$$

$$+8 (NWC_2 = 2.9 + 76.8 + 8.1 - 22.0)$$