Corporate Finance Theory
FINA 4330
Fall 2010
Professor Nisan Langberg

SAMPLE – Second Quiz

You have an hour and fifteen minutes to complete the exam. There are three questions. Spend 20 minutes at most on each question at first and move on to the next. Show your work – final answers alone will not be accepted. Always make clear what formula you are using and highlight your final answers and distinguish final answers from other redundant calculations.

GOOD LUCK!

Question1 (30 points): Consider a 30 year mortgage for the sum of $250,000 with 6% APR compounded monthly.

1. Calculate the monthly payment.
2. Calculate the loan outstanding 15 years from now (that is, just after the 180^{th} payment).
3. Break the monthly payment into interest and principle for the 181^{th} payment.
4. After 15 years you discover that interest rates have dropped to the level of 5%. What is the largest refinancing fee you are willing to pay in order to refinance this mortgage?

Question 2 (40 points): Assume that the Gordon Growth Model applies in this question. The current book equity per share of firm X is BE_0=$100. The expected dividend to be paid at the end of the year is DIV_1 = $7.5, the plowback ratio is b = 0.25, and the current stock price is $136.36. Assume that investors' required rate of return on similar risk is 8%.

1. What is the firm's growth rate?
2. What are expected earnings per share at the end of the year?
3. What is the ROE of firm X?
4. The CFO is considering a plowback ratio of 30% instead of the original plowback ration of 25%. If this change takes effect immediately (at time t=0), then would you recommend switching to the higher plowback ratio? Please explain your recommendation.

Question 3 (30 points): Consider the following bond prices data.

BOND	Current Price	Face value	Time to maturity	Annual coupon rate
A	$9,708.7	$10,000	1	0%
B	$9,245.6	$10,000	2	0%
C	$10,310.7	$10,000	3	7%

1. Find the yields y_1, y_2, and y_3.

2. Consider the following bond D. Is it accurately priced by markets given the prices posted above in part 1 and the implied yield curve?

BOND	Current Price	Face value	Time to maturity	Annual coupon rate
D	$10,572.4	$10,000	2	7%

3. What forward rate can you currently lock in for a one year loan between time t=1 to t=2?

END