Corporate Finance
FINA 4330
Nisan Langberg

Third Quiz *SAMPLE*

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): Suppose that the Treasury bill rate is 4% and that the expected return on the market is 10%.

Firm	β
Amazon	2.16
Exxon Mobil	0.55

a) What is the expected return on Amazon’s equity according to the CAPM?

b) What would happen to the excepted return on Amazon’s equity if the interest rate were 5% (suppose that the market return remains 10%)?

c) What will be the average return on Exxon Mobil if the return on the market will be 7%?

d) If the market will go down (negative return) then on average the return on Amazon’s stock will be higher than the return on Exxon Mobil’s stock. Is this true or false?

Question 2 (40 points): Your corporation is considering an expansion of its operations. A $17,000 study suggests that an expansion would require an initial investment of $500,000. It is believed that the expansion will affect the firm's performance for the coming 10 years, after which the market for its product will dry out. In particular, the expansion would increase revenues by $175,000, increase costs by $35,000, and require a $15,000 increase in working capital immediately that is recovered ten years from now. Finally, the expansion will use an existing building that is currently owned by the firm and is rented out for $20,000 a year. If the expansion project is adopted then the firm will forego ten years of rent on this building (assume rent payments are made at the beginning of each year). The firm's cost of capital is r=15% and its marginal tax rate is 35%.

a) Calculate the after tax cash flows from adopting the expansion project.

	In millions of $			
(1)	Cash revenue			
(2)	Operating expenses			
(3)	Capital expenditures			
(4)	Depreciation			
(5)	Other income			
(6)	Taxable earnings			
(7)	Taxes			
(8)	Change in WC			
	After tax operating cash flow			

b) Calculate the NPV of the expansion project.

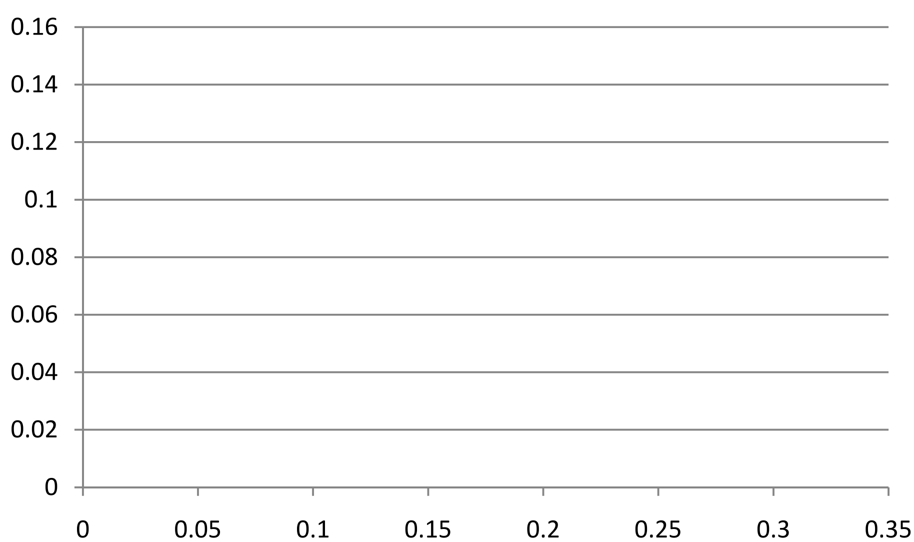
Question 3 (30 points): Consider the following two assets:

Asset/Stock	Expected return	Standard deviation
A	10%	20%
B	15%	30%

a) What is the expected return and standard deviation of a portfolio P1 consisting of 60% asset A and 40% asset B? Assume correlation of -0.5 (negative one half) between the two assets A and B.

b) What are the weights (w_A in asset A, and ($1-w_A$) in asset B) required to achieve a portfolio P2 with expected return of 13%? What is the standard deviation of this portfolio?

c) Plot assets A and B, and portfolios P1 and P2. Is it efficient to hold asset A? what about asset B? If your answer is no then identify an alternative asset or portfolio that dominates.



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