Introduction to Finance

Quiz 7 *December 4, 2018*

Show all work and clearly indicate your answer! Please answer only the question that I ask directly.

1. Suppose that CSX just issued 6-year 0-coupon bonds that sell for 69.77. At the same time, Norfolk Southern issued 6-year 0-coupon bonds that sell for 72.98, and the 6-year 0-coupon Treasury security (a STRIPS) sells for 78.66.

   (a) (**11 points**) What are the continuously compounded yields to maturity on these 3 6-year 0-coupon securities?

   (b) (**11 points**) What are the expected returns on these 3 securities? If they are not the same explain why they are different.

2. Suppose that you buy \$500 par value of each of 1,000 different BBB-rated 6-year zero-coupon bonds all of which have a yield to maturity of 7% on a continuously compounded basis, when the continuously compounded yield to maturity on the 6-year zero-coupon US Treasury STRIPS is 4%.

   (a) (**11 points**) What is the initial (market) value of your portfolio?

(b) (**11 points**) What is the expected return on this portfolio?

(c) (**11 points**) If you hold this portfolio for 6 years, how many of the 1,000 bonds that you bought do you expect to be in default (and worth 0)?

(d) (**11 points**) If you hold this portfolio for 6 years, what do you expect its value to be at that time?

(e) (**11 points**) If you hold this portfolio for 6 years, what is your continuously compounded realized (holding period) return, if at that time its value equals your expectation?

(f) (**11 points**) Suppose that there was a depression during most of your holding period, and your portfolio experienced an actual hazard rate of 6% on a continuous basis. What would your continuously compounded realized (holding period) return be in this case?

(g) (**12 points**) Explain how your answers to the preceding two questions (parts e and f) are related to the expected return on this portfolio (from part b).