Session 6: Post Class tests

1. The equity risk premium is the premium that investors charge over and above the risk-free rate to invest in equities. A key source of information about equities is earnings reports from companies. In the last two decades, companies have used both accounting discretion and operating choices to “manage” their earnings, making them smoother (less variability over time). What consequence would you expect for equity risk premiums from managed earnings?
   a. Equity risk premiums should go down. (Earnings are smoother)
   b. Equity risk premiums should go up. (Earnings are less informative)
   c. Equity risk premiums should not change.

2. If investors are rational, the expected equity risk premium for a market should never be less than zero.
   a. True
   b. False

3. Many analysts use past data on stock and government security returns to estimate a historical risk premium. Assume that the arithmetic (geometric) average of annual stock returns is 10% (9%) and that the arithmetic (geometric) average of annual treasury bond returns is 5% (4.5%) over a hundred year period. If the annualized standard deviation in stock returns over this period was 20%, which of the following is your fairest characterization of the historical risk premium (which you plan to use in your long term hurdle rate)?
   a. Historical risk premium is 5%, standard error is 20%
   b. Historical risk premium is 4.5%, standard error is 2%
   c. Historical risk premium is 5.5%, standard error is 2%
   d. Historical risk premium is 4%, standard error is 2%
   e. None of the above

4. There are some analysts who use historical risk premiums with emerging markets, using average premiums over ten to fifteen years, in their estimates. Which of the following would you be most concerned about, with this approach?
   a. Equity risk premiums will be too high, since emerging markets do better than developed markets.
   b. Equity risk premiums will be too low, if there is a bear market during the estimation period.
   c. A historical risk premium with only ten to fifteen years of data will have a very high standard error.
   d. Emerging markets are too volatile.
   e. Emerging markets are dynamic and changing over time.

5. The sovereign rating for Vietnam is B2 (with a default spread of 5%), the standard deviation in the Vietnamese equity index is 30% and the standard deviation in the Vietnamese government bond is 24%. If the premium for a mature market (say, the US) is 5.5%, estimate the total equity risk premium for Vietnam.
   a. 11.75%
   b. 6.25%
c. 5%
d. 10.5%
e. None of the above
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1. **b. Equity risk premiums should rise.** If companies try to manage and manipulate earnings, investors trust those earnings numbers less. If they trust the earnings numbers less, equities will become riskier. Thus, earnings management, in general, even if it makes earnings smoother will make them less reliable and equity risk premiums should rise.

2. **True.** While actual equity risk premiums can be negative (in a period where stocks do badly and bonds do well), the expected equity risk premium should be positive, if investors are rational.

3. **b. Risk premium is 4.5%, Standard error is 2%.** A risk premium in a hurdle rate will get compounded over time and is therefore better computed using the geometric averages. The standard error is computed by dividing the standard deviation of 20% by the square root of 100.

4. **c. A historical risk premium with only ten to fifteen years of data will have a very high standard error.** You need a lot of historical data to be able to estimate an equity risk premium with any degree of precision. While you should be concerned about changing business risk profiles, that is a far smaller problem.

5. **a. 11.75% or d. 10.5%.** There are two solutions. My preferred one is to take the default spread and scale it up to reflect the higher risk in equities (5% * 30/24 = 6.25%) and to add this to the mature market premium (5.5%). My second best solution is to just add the default spread to the mature market premium (5.5% + 5% = 10.5%)