

Session 6: Post class test solutions

1. **a. The rate on a 10-year US treasury bond.** To get a risk free rate in US dollars, you cannot use a peso bond rate or the rate on a Mexican dollar bond (since it has default risk in it). You also need a long-term rate to get to a hurdle rate; hence the T.Bill rate will not work.
2. **f. None of the above.** You can start with a ten-year peso bond rate of 6%, but it has default risk. Since the local currency and foreign currency ratings are the same, you can estimate the default spread on the Mexican bond to be 1.5% by subtracting the US treasury bond rate of 2% from the Mexican government dollar bond rate of 3.5%. Subtracting this from the 6% peso rate gives you a riskfree rate of 4.5% in pesos.
3. **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.
4. **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.
5. **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.
6. **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.