Session 8a: Post class test solutions

1. **c. The ADR against the MSCI index**. If we stay true to the notion that beta measures risk as perceived by the marginal investor, the marginal investor here is a global investor. Hence, the index that makes the most sense is a global index. While you could regress the local listing returns against the MSCI, the MSCI is a dollar index and ADR returns are a little better suited, since it is in dollar terms as well.
2. **b. About 1.08% better than expected**. Start by estimating the Jensen's alpha, in monthly terms since the regression is in monthly terms. The monthly riskfree rate is 0.30% (3.6%/12) and Jensen's Alpha = -0.15% - 0.30% (1-1.80) = +0.09%. Multiplying by 12, you get 1.08%. You could also get a more accurate answer by compounding. $(1.0009)^{12}$-1 = 1.01085 or 1.085%.
3. **c. Higher than 25%**. If there were no diversification benefits (i.e., the firms were perfectly correlated), the R-squared would fall halfway between the R-squared of the two firms. However, a chemical company and a technology company are unlikely to move together in unison. Hence, there should be less firm specific risk in the combined firm after the merger, resulting in a higher R-squared for the firm.
4. **a. 1.20-2.40.** For 95% confidence, you would need to add/subtract two standard errors from the point estimate. In this case, that would mean adding 0.60 (2*0.30) to 1.80, yielding 2.40 and subtracting 0.60 from 1.80, resulting in 1.20.
5. **c. Firm has positive Jensen's alpha; Average Jensen's alpha for sector is negative.** A positive Jensen's alpha is good, but it may be entirely the result of factors external to the firm. Thus, if the entire sector does well, it is possible that even badly managed firms in the sector do well (and have positive Jensen's alpha).