

FINA 0025 –Financial Management
Portfolio Theory
Tutorial Solutions for Lecture 6

Note that detailed answers to tutorial questions will only be provided in tutorials. The following abridged answers are intended as a guide to these detailed answers. This policy is in place to ensure that you attend your tutorial regularly and receive timely feedback from your tutor. If you are unsure of your answers you should check with your tutor, a pit stop tutor or the lecturer.

A. Short Answer Questions**A1.**

- a) True. A risk neutral investor would not care about risk.
- b) False. A risk averse investor would seek to minimize his/her risk.
- c) True. A risk averse investor would seek to minimize his/her risk.
- d) False. A risk seeking investor would prefer risk.

A2.

- a) True
- b) False
- c) True
- d) False

B. Multiple Choice Questions

B1. A is correct. We need the mean geometric return based on the starting and ending cash flows return is which is 4.7%.

B2. B is correct. Based on the discrete returns over 2006 and 2007 the geometric average return is -13.39%.

B3. D is correct. Based on the amount invested and the total value of the investment at the end of the year, we get 13.64%.

B4. C is correct. The rates of return in each state are:-10%, 0% and 30%, respectively. The expected return is 6% and the standard deviation is 16.25%.

B5. B is correct. The rates of return in each state are: 30%, 20% and 0%, respectively. The expected return is 17% and the variance 0.0141.

B6. A is correct. See lecture notes for definition of portfolio leveraging

B7. B is correct. See lecture notes for definition of short selling.

B8. C is correct.

B9. D is correct. We need information on the return correlation or covariance between X and Y.

B10. A is correct. The weight in the risk free security is -0.5 and the market portfolio is 1.5.

C. Problems**C1.**

a) $E(r) = 3.0\%$ $\sigma = 10.54\%$

b) $E(r_{T\text{-bill}}) = 5.0\%$

The stock is not a good investment because you can earn a riskfree expected return of 5.0% which is higher than the return you can expect to earn on this (risky) stock.

C2.

a) $E(r_p) = 12\%$

b) $\sigma_p^2 = 7.68\%$

c) $W_A = 0.6$ and $W_C = 0.4$ $\sigma_p^2 = 10.31\%$

d) a risk averse investor would prefer the portfolio consisting A and B.

C3. Weight in A is 62.5% and in B 37.5%. The expected return of the portfolio is 6.75%.**C4.**

a) $E(r_p) = 10.2\%$ $\sigma_p = 19.8\%$

b) $E(r_p) = 9.8\%$ $\sigma_p = 21.3\%$

c) The three-security portfolio is riskier than the two-security portfolio.