

Question 11 (4 June 2009, Q1).

Suppose the rate of return on the safe asset is 4%. Assume that *Heinze Corp* stock presents a standard deviation of its return equal to 26% and a correlation with the market portfolio return equal to 0.33. Assume, moreover, that the return on the market portfolio presents an expected value equal to 10% and a standard deviation equal to 16%.

Assume the CAPM hold.

1. What is the expected return on *Heinze Corp* stock?
2. What is the percentage of the volatility of *Heinze Corp* stock which is due to the non-systematic component of risk of such an asset? How do you interpret your answer?

Question 6 (14 September 2009, Q4).

Suppose you can invest your wealth in only two risky securities, x and y , whose returns we denote with \tilde{r}_x and \tilde{r}_y respectively. Suppose that these returns are uncorrelated and that their expected values and standard deviations are respectively $E[\tilde{r}_x] = 0.10$, $E[\tilde{r}_y] = 0.05$, and $\sigma_x = 0.20$, $\sigma_y = 0.10$.

Hence, consider portfolios made of these two securities. In particular, let a generic portfolio, p , be identified by the weight w_x assigned to security x .

1. What are the expected value and the standard deviation of the return on such portfolio, \tilde{r}_p ? How do these value depend on the weight w_x ? How do these values vary when the weight w_x augments?
2. For which value of the weight w_x do we find the minimum variance portfolio? What are the expected value and the standard deviation of the return on the minimum variance portfolio, \tilde{r}_{mvp} ?
3. For which values of w_x do we have efficient portfolios?

[Hint: Use a diagram in the (σ, E) space to explain your answers.]

Question 13 (13 October 2010, Q1).

Indicate which of the following statements are true/false. Explain your answers.

1. The CAPM suggests that an asset with a negative beta possesses a negative expected rate of return.
2. The expected rate of return of an asset with a beta equal to 3.0 is three times that of the market portfolio.