

## Unit 7 - Week 4: Mean-Variance Portfolio Theory- II

Course outline
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MATLAB
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## Assignment 4

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2020-10-14, 23:59 IST.**

- 1) Consider a portfolio P of a risky asset  $a_1$ , with expected return,  $E(r_1) = 1.5r_f$  and a risk-free asset with return,  $r_f = 10\%$ .  
If the weights assigned to the risky asset and the risk-free asset are 0.6 and 0.4, respectively,  
then the expected return (in percentage) of the portfolio P equals :

**Hint**

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
(Type: Range) 12,14

1 point

- 2) Which of the following is true in case of the Capital Market Line (CML), with  $E(r_P) = \mu_P$  and  $E(r_m) = \mu_m$  :

1 point

$$\mu_P = r_f + \left( \frac{\mu_m - r_f}{\sigma_m} \right) \sigma_P$$

$$\mu_P > r_f + \left( \frac{\mu_m - r_f}{\sigma_m} \right) \sigma_P$$

$$\frac{\mu_P - r_f}{\sigma_P} = \frac{\mu_m - r_f}{\sigma_m}$$

$$\frac{\mu_P - r_f}{\sigma_P} > \frac{\mu_m - r_f}{\sigma_m}$$

No, the answer is incorrect.  
Score: 0  
Accepted Answers:

$$\mu_P = r_f + \left( \frac{\mu_m - r_f}{\sigma_m} \right) \sigma_P$$

$$\frac{\mu_P - r_f}{\sigma_P} = \frac{\mu_m - r_f}{\sigma_m}$$

- 3) A portfolio has the risk (as given by standard deviation of returns) of 10%, with the expected return and risk (as given by standard deviation of returns) of the market portfolio being 5% and 8%, respectively.  
If the risk-free rate is 4%, then the expected return (in percentage) of the portfolio equals :

**Hint**

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
(Type: Range) 5.2,5.3

1 point

- 4) If a security (with return  $r$ ) is under-priced, then which of the following holds?

1 point

$$E(r) < r_f + \beta [E(r_m) - r_f]$$

$$E(r) = r_f + \beta [E(r_m) - r_f]$$

$$E(r) > r_f + \beta [E(r_m) - r_f]$$

No, the answer is incorrect.  
Score: 0  
Accepted Answers:

$$E(r) > r_f + \beta [E(r_m) - r_f]$$

1 point

- 5) Consider the following values:  $r_f = 5\%$ ,  $E(r_m) = 8\%$  and  $\beta = 0.5$ .  
Then the value of  $E(r)$  (in percentage) for the asset to be correctly priced, equals :

5.6

5.8

6.5

6.8

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
6.5

- 6)

Consider a one-period asset pricing model where the values of  $S(1)$  can be  $S(1) = 110$  or  $S(1) = 90$  (at time  $t = 1$ ), each with probability  $\frac{1}{2}$ .

Further, let  $r_f = 5\%$ ,  $\beta = 0.2$ , and  $E(r_m) = 9\%$ . Then, in the CAPM framework,  $S(0)$  equals :

**Hint**

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
(Type: Range) 94,95

1 point

- 7) In the CAPM framework, the value of  $S_P - S_m$  equals :

1 point

-1

0

1

$\frac{1}{2}$

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
0

- 8) Consider two risky assets  $a_1$  and  $a_2$ , with the respective expected returns being  $\mu_1 = 6\%$  and  $\mu_2 = 8\%$ , and the respective betas being  $\beta_1 = 0.12$  and  $\beta_2 = 0.18$ . Let the risk-free rate be 4%. If  $T_1$  and  $T_2$  are the Treynor ratios of  $a_1$  and  $a_2$ , respectively, then the value of  $|T_1 - T_2|$  equals :

**Hint**

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
(Type: Range) 0.05,0.06

1 point