

Unit 6 - Week 3: Mean-Variance Portfolio Theory

Course outline
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MATLAB
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<input checked="" type="radio"/> Lec 2: Expected return and risk of a portfolio; Minimum variance portfolio
<input type="radio"/> Lec 3: Multi-asset portfolio and Efficient frontier
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Assignment 3

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

Due on 2020-10-07, 23:59 IST.

1) If a stock is purchased for 200 and sold for 213 after one year, then the rate of capital gains (in percentage) for one year equals : 1 point

- 5.5
 6
 6.5
 7

No, the answer is incorrect.
Score: 0

Accepted Answers:
6.5

2) 1 point

Consider a stock which can be purchased for 100 and its value after one year takes the following values, depending on the state of the economy:

State	Value	Probability
Recession	85	0.2
Stagnation	100	0.4
Boom	110	0.4

Then the expected return on the stock (in percentage) equals:

- 0.5
 0.75
 1
 1.30

No, the answer is incorrect.
Score: 0

Accepted Answers:
1

3) Consider the same Table as given in Question No. 2. Then the variance of returns on the stock (in percentage) equals : 1 point

- 0.75
 0.80
 0.82
 0.84

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.84

4) The historical stock prices are given by the values 100, 90, 85, 95 and 105, all with equal probabilities of 0.2. Then the estimated value of the variance of returns based on these historical data equals : 1 point

- 0.9219
 1.2368
 0.8874
 1.1174

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.9219

5) Suppose that we have a portfolio comprising of 10 and 20 stocks of risky assets a_1 and a_2 , respectively, with the prices of the two assets (at time $t = 0$) being $S_1(0) = 20$ and $S_2(0) = 10$, respectively. Now, at time $t = 1$, if the prices of the assets become $S_1(1) = 40$ and $S_2(1) = 20$, respectively, then the change in the weight w_1 (of asset A_1) from $t = 0$ to $t = 1$ equals : 1 point

- 0.1
 -0.05
 0
 0.40

No, the answer is incorrect.
Score: 0

Accepted Answers:
0

6) Consider a portfolio of two assets a_1 and a_2 with the expected returns being $\mu_1 = 4\%$ and $\mu_2 = 6\%$, respectively. Further, $\sigma_1 = 6\%$ and $\sigma_2 = 8\%$ and the asset returns are uncorrelated. Then the weight of the second asset a_2 at which the portfolio attains its minimum variance equals :

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 0.35,0.37

1 point

7) Which of the following is (are) feasible set(s) for a three asset portfolio, with no short selling being allowed. 1 point

- $(w_1, w_2, w_3) = (0, 0.5, 0.5)$
 $(w_1, w_2, w_3) = (-0.2, 0.7, 0.5)$
 $(w_1, w_2, w_3) = (0.3, 0.3, 0.4)$
 $(w_1, w_2, w_3) = (1.0, 0.5, -0.5)$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $(w_1, w_2, w_3) = (0, 0.5, 0.5)$
 $(w_1, w_2, w_3) = (0.3, 0.3, 0.4)$

8) Consider two efficient portfolios P_1 and P_2 , with $\mu_{P_1} = 0.04$ and $\mu_{P_2} = 0.09$. If α and $(1 - \alpha)$ are the weights of investment in P_1 and P_2 , respectively, to achieve an expected return of 0.06, then the ratio $\frac{\alpha}{1 - \alpha}$ equals : 1 point

- $\frac{3}{5}$
 $\frac{3}{2}$
 $\frac{5}{3}$
 $\frac{2}{5}$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $\frac{3}{2}$