

## Unit 9 - Week 6: Non-Mean-Variance Portfolio Theory- II

Course outline
How does an NPTEL online course work?
MATLAB
Week 0: Prerequisite
Week 1: Basics of Probability Theory
Week 2: Basics of Financial Markets
Week 3: Mean-Variance Portfolio Theory
Week 4: Mean-Variance Portfolio Theory- II
Week 5: Non-Mean-Variance Portfolio Theory
Week 6: Non-Mean-Variance Portfolio Theory- II
<input type="radio"/> Lec 1: Portfolio theory with utility functions
<input checked="" type="radio"/> Lec 2: Geometric Mean Return and Roy's Safety-First Criterion
<input type="radio"/> Lec 3: Kataoka's Safety-First Criterion and Telser's Safety-First Criterion
<input type="radio"/> Quiz : Assignment 6
<input type="radio"/> Feedback form
<input type="radio"/> Assignment Solution
Week 7: Non-Mean-Variance Portfolio Theory- III
Week 8: Optimal Portfolio and Consumption
Week 9: Optimal Portfolio and Consumption- II
Week 10: Bond Portfolio Management
Week 11: Risk Management
Week 12: Applications with market data
Live Session: Mathematical Portfolio Theory
Text Transcripts

## Assignment 6

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

**Due on 2020-10-28, 23:59 IST.**

1) If  $E[U(W)] \simeq \alpha f[E(W)] + \beta f''[E(W)]\sigma_W^2$ . Then  $3\alpha - 2\beta$  equals :

1 point

- 1  
 1.5  
 2  
 2.5

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
2

2) Let  $U(W) = 2W - 3W^2$ . If  $U(W_T) = a + br_P - cr_P^2$ , with  $W_0 = 10$ , then  $a + b + 3c$  equals :

1 point

- 35  
 40  
 45  
 50

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
40

3) If  $\ln(1 + r_t)$ , is a normal distribution then which of the following is true :

1 point

- $1 + r_t$  is normal  
  $1 + r_t$  is log-normal  
  $\ln(1 + r_t)$  is normal  
  $\ln(1 + r_t)$  is log-normal

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 $\ln(1 + r_t)$  is log-normal

4) Consider a risky asset with five historical returns, 8%, 6%, 7.5%, 5.25% and 6.3%. Then the GMR (in percentage) equals :

Hint

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
(Type: Range) 6.4,6.8

1 point

5)

1 point

If the returns are normally distributed with  $r_L = r_f$ , then the most preferred portfolio, using the Roy's Safety First Criterion is the one given by :

- Fixed  $S_p$  and largest  $r_f$   
 Fixed  $S_p$  and smallest  $r_f$   
 Fixed  $r_f$  and largest  $S_p$   
 Fixed  $r_f$  and smallest  $S_p$

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Fixed  $r_f$  and largest  $S_p$

6)

1 point

Consider the following Table:

	Portfolio A	Portfolio B	Portfolio C
$E(r_P)$	10%	12%	14%
$\sigma_P$	9%	11%	13%

If  $r_L = 4\%$  and the returns are normally distributed, then the most preferred portfolio(s) using the Roy's Safety First Criterion is:

- Portfolio B  
 Portfolio C  
 Portfolio A and C  
 Portfolio A and B

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Portfolio C

7)

1 point

If the returns are normally distributed, then the most preferred portfolio, using the Kataoka's Safety First Criterion is the one given by :

- Smallest  $r_L$ , with  $r_L = E(r_P) + z_\alpha \sigma_P$   
 Largest  $r_L$ , with  $r_L = E(r_P) + z_\alpha \sigma_P$   
 Smallest  $r_L$ , with  $r_L = E(r_P) - z_\alpha \sigma_P$   
 Largest  $r_L$ , with  $r_L = E(r_P) - z_\alpha \sigma_P$

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Largest  $r_L$ , with  $r_L = E(r_P) - z_\alpha \sigma_P$

8)

1 point

If the returns are normally distributed, then the least value of the expected return of a portfolio, for the Telser's Safety First Criterion to be applicable is :

- $\sigma_P + z_\alpha r_L$   
  $\sigma_P - z_\alpha r_L$   
  $r_L + z_\alpha \sigma_P$   
  $r_L - z_\alpha \sigma_P$

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 $r_L + z_\alpha \sigma_P$