Tutorial Assignment 5 - Due 6 Sept at 10:00am (Start of Week 7) - CAPM

Started: Sep 5 at 21:10

Quiz Instructions

Please note: this is marked by a computer program. I have built in an allowance for rounding, but it is not a big allowance. It is safest to NOT round intermediate results and do all rounding at the very end.

This tutorial assignment is marked and worth 1.25 marks toward your final mark in this subject. There are 9 questions and you will be awarded $\frac{1.25}{9} = 0.1389$ marks toward your final mark for EACH question.

Please note that your tutorial assignment consists of 2 parts -

Part A is unmarked - you can download the questions as a PDF from the first question of the quiz.

Part B is marked by Canvas - it is the on-line quiz you are about to take now. Please print a pdf or take a screen shot of your answers to the computer-based quiz (Part B) at the end. This is insurance in case you write something that the program thinks is an error, but it is not really an error. **Your only time limit is the due date and time. Please note, that only your last attempt of the Quiz is saved and marked.**

Q: What if I do not have time to finish in one sitting?

A: You are permitted multiple attempts, but your **last** attempt before the due date and time is the one that is marked. Canvas, appears to save your answers after you enter them, but you might want to make note of them just in case of a computer glitch.

Part A - the unmarked portion of your tutorial assignment, to be discussed in your tutorials during the week of 6 Sept.

Assignment5A_CAPM.pdf

Part B is below.

For questions 1-8 please answer "True" if the situation described is consistent with the CAPM being valid. Answer "False" if something about the data suggests that the CAPM is not valid, if these data are correct. **Consider each situation independently.**

Question 1

1 pts

$E[\tilde{r}_p] - r_f = \beta_p (E[\tilde{r}_M] - r_f)$.

$\beta \uparrow$

Portfolio	$E[r]$	β
A	20%	1.4
B	25%	1.2

- ○ True
- ○ False

Question 2

1 pts

Portfolio	$E[r]$	σ
A	30%	35
B	40%	25

- ○ True
- ○ False

Question 3

1 pts

Portfolio	$E[r]$	σ
r_f	10%	0%
Market	18	24
A	16	12

$E[\tilde{r}_p] - r_f = \beta_p (E[\tilde{r}_M] - r_f)$.

$Sharpe_A = \frac{6\%}{12} = \frac{1}{2}$

$Sharpe_M = \frac{8\%}{24} = \frac{1}{3}$

- ○ True
- ✓ False

Question 4

1 pts

Portfolio	$E[r]$	σ
r_f	10%	0%
Market	18	24
A	16	**22**

$Sharpe_A = \frac{6\%}{22} = 0.27$

$Sharpe_M = \frac{8\%}{24} = \frac{1}{3} = 0.33$

- ✓ True
- ○ False

Question 5

1 pts

Portfolio	$E[r]$	β
r_f	10%	0
Market	18	1.0
A	16	1.5

$E[r_p] - r_f = \beta_p (E[r_M] - r_f)$

$0\% = 1.5 \cdot 8\%$

$1.5 \times 8\% + 10\% = 22\%$

$\alpha = -4\%$ overpriced.

- ○ True
- ✓ ○ False

Question 6

1 pts

Portfolio	$E[r]$	β
r_f	10%	0
Market	18	1.0
A	16	0.9

$\beta = 0.9$

$0.9 \cdot 8\% + 10 = 17.2\%$

$\alpha = -1.2\%$

overpriced

- ○ True
- ✓ ○ False

Question 7

1 pts

Portfolio	$E[r]$	σ
r_f	10%	0%
Market	18	24

$Sharpe_M = \frac{8\%}{24} = \frac{1}{3}$

$Sharpe_A = \frac{10\%}{22} = 0.45$

A	20	22

A dominates the market portfolio

- ○ True
- ✓ False

Question 8

1 pts

Portfolio	$E[r]$	β
r_f	8%	0
Market	16	1.0
A	12	.25

$E[\tilde{r}_p] - r_f = \beta_p (E[\tilde{r}_M] - r_f)$

$E[r_A] = 0.25 \times 8\% + 8\%$

$= 10\%$

$\alpha = 2\%$. underpriced

- ○ True
- ✓ False

Question 9

1 pts

[Chapter 7, Exercise 10 in the textbook] The market price of a security, that is expected to pay a constant dividend in perpetuity, is $40. Its expected rate of return is 13%. The risk-free rate is 7% and the market risk premium is 8%. What will the market price of the security be if its beta doubles (and all other variables remain unchanged)? Recall that the value of a perpetuity is $P = \frac{E[D]}{E[r]}$

27.3684

$P = \$40$. $E[D] = 40 \times 13\% = 5.2$.

$E[r] = 13\%$

$r_f = 7\%$

$E[r_M] - r_f = 8\%$.

$\beta_{original} = \frac{3}{4}$

$\beta_{after} = \frac{3}{2}$

$E = 8\% \times \frac{3}{2} + 7\% = 19\%$

Saved at 21:11 Submit Quiz