FINA 0025 –Financial Management
Portfolio Theory
Tutorial Questions for Lecture 4 and 5

These questions do not need to be submitted and will be discussed in Tutorial 1. Note that detailed answers to these questions will only be provided in tutorials. This policy is in place to ensure that you attend your tutorial regularly and receive timely feedback from your tutor. If you are unsure of your answers you should check with your tutor, a pit stop tutor or the lecturer.

A. Multiple Choice Questions

A1.

Which of the following is an assumption underlying capital market theory?

a) Not all the investors have the credit to allow them to borrow or lend at the risk-free rate.
b) Not all investments are infinitely divisible.
c) All investors wish to be on the efficient frontier.
d) There can be inflation or changes in interest rates.

A2.

Which of the following statements concerning the SML and CML is *least* accurate?

a) The CML and SML both measure risk on the horizontal axis.
b) Both the CML and SML may contain efficient and inefficient portfolios.
c) The slopes of both the CML and SML may change over time.

A3.

TGIF Investment Company specializes in quantitative investment management. A pension fund has approached RGIF to achieve a specific portfolio risk, while maximizing return. Currently, the market portfolio has an expected return of 10% with a standard deviation of 15%. The pension fund has asked that its portfolio have a standard deviation of 30% with a return objective of achieving the maximum return available. How should TGIF invest the pension funds assets?

a) Buy a riskier portfolio of securities that lies on the efficient frontier with a standard deviation of 30%.
b) Borrow at the risk-free rate and invest in the market portfolio to achieve a 30% standard deviation.
c) Increase the security-specific risk in the market portfolio to achieve a 30% standard deviation.
d) Lend at the risk-free rate and invest in the market portfolio to achieve a 30% standard deviation.

A4.

As investors become more risk averse the market price of risk:

a. increases and stock values rise
b. increases and stock values fall
c. Decreases and stock values rise

A5.

The demand for increasing yields on bonds as credit risk increases is evidence of an investor's:

a) Risk eliminating behavior
b) Risk seeking behavior
c) Risk averse behavior

A6.
According to Markowitz Portfolio theory:
a) Each investment will have a single expected return
b) Risk is measured by the volatility of expected returns
c) Investors experience increasing marginal utility of wealth

A7.
Which of the following statements regarding assumptions of Markowitz's Portfolio Theory is *most* accurate?
a. If risk is constant, lower returns are preferred by investors
b. Investment decisions are based only on expected return and expected risk
c. Investment decisions are based on expected return, expected risk and behavioral biases.

A8.
For a portfolio consisting of many assets, the most important factor to consider when adding an asset to a portfolio from the standpoint of diversification is:
a. That security's variance
b. That security's average covariance with the other assets
c. The market sector represented by the new asset

A9.
Stock A has an expected return of 12% and a standard deviation of 18%, while stock B has an expected return of 15% and a standard deviation of 15%. What is the standard deviation of a portfolio weighted 75% A and 25% if the correlation between stocks A and B is 0.8?

A10.
Ne Dennis, a financial planner and CFA charterholder, is working with two clients:
Client One is strongly opposed to taking on risk in his investment portfolio. Client One will only accept additional risk in his portfolio if he is well compensated for that additional risk by receiving a large amount of additional expected return.

Client Two, also does not like risk; however, Client Two is not risk averse as is Client One. Relative to Client One, for taking on the same amount of additional risk in her portfolio, Client Two does not require as much additional expected return as compensation.

Client One's investment utility curves are:
a. Steeper than Client Two's, and Client One's optimal portfolio is located higher on the efficient frontier
b. Flatter that Client's Two's, and Client's One's optimal portfolio is located lower on the efficient frontier.
c. Steeper than Client Two's, and Client One's optimal portfolio is located on the efficient frontier.

A11.
Which one of the following statements *best* describes the utility curve of a risk-averse investor?
a. It is the range of portfolios that have the standard deviation and different rates of return
b. It connects portfolios that offer increasing utilities according to returns and variances
c. It is the range of portfolios that offer the same utility according to returns and variances.

B. Problems

B1.

An investor plans to invest $100, with a portion in a risky asset and a portion in a risk-free asset. The risky asset has a expected return of 12% and a standard deviation of 15%, while the risk-free asset has an expected return of 5%.

What percentages must be invested in the risky asset and the risk-free asset, respectively, to create a portfolio with an expected return of 9%?

What if he wants to form a portfolio with a standard deviation of 0.06?

B2.

What is the expected return for stocks in the following situation?

Economic Scenario	Probability	Stocks	Bonds	T-Bills
A	0.5	18%	14%	11%
B	0.3	- 15%	35%	7%
C	0.2	10%	-14%	12%

B3.

You have been given the task of analyzing portfolios using the Markowitz efficient frontier. You examine four portfolios and compiled the data in the table below. Which portfolio is least likely to lie on the efficient frontier?

	Expected Return	Standard Deviation
Portfolio A	15%	18%
Portfolio B	12%	10%
Portfolio C	10%	17%
Portfolio D	8%	6%

B4.

An analyst compiled the following information about A Corporation's common stock returns:

Range of Returns	**Observations within Range**
-10 up to 0%	30%
0 up to 10	30%
10 up to 20	40%

The analyst considers constructing a portfolio of 60% of assets in A Corporation's shares and the rest in a one-year Treasury bill yielding 5%. What is the expected return and standard deviation of this portfolio?

B5.

Given the following information about the expected returns (R) and standard deviations of returns for two assets, calculate the expected return and standard deviation of a portfolio that is 50% invested in Asset 1 and 50% invested in Asset 2.

	Expected Return (R)	**Standard Deviation**
Asset		
1	10%	20%
2	10%	20%

1. Assuming the two assets are uncorrelated ($r_{1,2} = 0$)
2. Assuming the two assets are perfectly positively correlated ($r_{1,2} = +1$)
3. Assuming the two assets are perfectly negatively correlated ($r_{1,2} = -1$)