Seminar 6

A. Multiple Choice Questions

A1. An investor has an equal amount invested in each of the following four securities:

Security	Expected Annual Rate of Return
W	0.10
X	0.12
Y	0.16
Z	0.22

The investor plans to sell Security Y and use the proceeds to purchase a new security that has the same expected return as the current portfolio. The expected return for the investor's new portfolio, compared to the current portfolio, will be:
a. lower regardless of changes in the correlation of returns among the securities.
b. The same regardless of changes in the correlation of returns among the securities.
c. lower only if the correlation of the new security with securities W, X and Z is lower than the correlation of security Y with the other securities.

A2. Markowitz Portfolio theory is *most* accurately described as including an assumption that:
a. risk is measured by the range of expected returns
b. investors have the ability to borrow or lend at the risk-free rate of return
c. investor utility curves demonstrate diminishing marginal utility of wealth.

A3. An investor currently holds a portfolio that is expected to return 12 percent. The investor is planning to sell one of the securities included in the current portfolio that has an expected return of 14 percent and use the proceeds to purchase a security that has an expected return of 13 percent. Compared to the investor's current portfolio, the expected return for the investor's revised portfolio will be:
a. Above 12 percent whether or not any change occurs in the standard deviation of the portfolio.
b. Below 12 percent whether or not any change occurs in the standard deviation of the portfolio.
c. below 12 percent only if the standard deviation of the new security is higher than the standard deviation of the security that was sold

B. Problems

B1. The following are the monthly rates of return for Madison Corp. and for General Electric during a six-month period:

Month	Madison Corp.	General Electric
1	-0.04	0.07
2	0.06	-0.02
3	-0.07	-0.10
4	0.12	0.15
5	-0.02	-0.05
6	0.05	0.02

Compute the following:

a. Average monthly rate of return for each stock.

b. Standard deviation of returns for each stock.

c. Covariance between the rates of return.

d. The correlation coefficient between the rates of return. What level of correlation did you expect? How did your expectations compare with the computed correlation? Would these two stocks offer a good chance for diversification? Why or why not?

B2. You are considering two assets with the following characteristics:

$E(R_1) = 0.15 \quad E(\sigma_1) = 0.10 \quad w_1 = 0.5$

$E(R_2) = 0.20 \quad E(\sigma_2) = 0.20 \quad w_2 = 0.5$

Compute the mean and standard deviation of two portfolios if $\rho_{1,2} = 0.40\ and - 0.60$, respectively. Briefly explain the results.

B3.

Given:

$E(R_1) = 0.10 \quad E(R_2) = 0.15 \quad E(\sigma_1) = 0.03 \quad E(\sigma_2) = 0.05$

Calculate the expected returns and expected standard deviations of a two-stock portfolio in which stock 1 has a weight of 60 percent under the following conditions:

a. $\rho_{1,2} = 1.00$

b. $\rho_{1,2} = 0.75$

c. $\rho_{1,2} = 0.25$

d. $\rho_{1,2} = 0.00$

e. $\rho_{1,2} = -0.25$

f. $\rho_{1,2} = -0.75$

g. $\rho_{1,2} = -1.00$

C. Long Answer Questions

C1. Discuss mean-variance analysis and its assumptions, and calculate the expected return and the standard deviation of return for a portfolio of two or three assets.

C2. Explain the minimum-variance and efficient frontiers, and discuss the steps to solve for the minimum-variance frontier.

C3. Discuss diversification benefits, and explain how the correlation in a two-asset portfolio and the number of assets in a multi-asset portfolio affect the diversification benefits.