

EE431/438 Economics of Financial Markets and Institutions

Problem Set 2: Mean-Variance Analysis.

Instructions:

Use the following information to answer part (a) and (b), (c) and (d) of this question.

1. Use the following information to answer part (a), (b), (c) and (d) of this question.

Portfolio	Expected rate of returns (%)	Standard deviation (%)
X	5	10
Y	9	20

Correlation coefficient (r_{xy}) between the rate of return of portfolio X and the rate of return of portfolio Y is -0.25. The risk free rate (R_f) is 1%.

- (a) Let the market portfolio M has 2/3 of the asset invested in X and 1/3 of the asset invested in Y. Calculate the expected rate of returns and the variance of portfolio M.
- (b) Given that the capital market line (CML) is tangent to the efficient frontier at the market portfolio, M in question (a). Find the equation for the CML.
- (c) Suppose that Mr. Stefan chooses to invest 0.6 of his wealth in the market portfolio M and the rest 0.4 of his wealth in the risk free asset. Calculate the standard deviation and the expected rate of returns on his portfolio
- (d) Assume that an investor can borrow and lend at risk free rate. Suppose that Miss Helen want to get 12% expected rate return. How can Miss Helen allocate her wealth between the market portfolio and the risk free asset?