

# EE431/438 Economics of Financial Markets and Institutions

## Exercise 3: Mean-Variance Analysis

1. Suppose that there are two securities in the market. The risk free rate is equal to 5%

	Expected Return	Standard Deviation
Security A	20%	30%
Security B	12%	15%

The correlation between the return of security A and security B is (-0.10).

- Calculate the Sharpe ratio for each of the two assets.
- Find the portfolio which has the minimum variance.
- Let portfolio C consisting of 50% in security A and 50% in security B. Calculate expected rate of return and variance of the portfolio C.
- Suppose that Mr.Smith choose to invest 70% in portfolio of risky asset C and 30% in the risk-free asset. What is the expected rate of return and standard deviation of the rate of return on his portfolio?
- Suppose that Mrs.Smith wants to invest a proportion of her total investment budget in risky portfolio C. If she wish her investmet portfolio to have an expected rate of return of 17%, what proportion should she invest in the risky portfolio C and what proportion in the risk-free asset?