

Problem Set 11

ECON 337901 - Financial Economics
Boston College, Department of Economics

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For Extra Practice - Not Collected or Graded

1. The Gains From Diversification

Consider portfolios formed from two risky assets, the first with expected return equal to $\mu_1 = 8$ and standard deviation of its return equal to $\sigma_1 = 8$ and the second with expected return equal to $\mu_2 = 4$ and standard deviation of its return equal to $\sigma_2 = 4$. Let w denote the fraction of wealth in the portfolio allocated to asset 1 and $1 - w$ the corresponding fraction of wealth allocated to asset 2. Suppose first that there is zero correlation between the two returns, so that $\rho_{12} = 0$, and compute the expected return on the portfolio and the standard deviation of the return on the portfolio for values of w equal to 0, 0.2, 0.4, 0.6, 0.8, and 1. Then repeat the calculations with $\rho_{12} = -0.50$. For which of these two values of ρ_{12} are the gains from diversification larger?