

Excel for Portfolio Optimization

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10:19 AM

- Expected Return = average
 - Highlight both averages, name ExpectedRealReturn
- Find Variance and Covariance
- Variance of Sum = $\text{SUM}(\text{Var1}, \text{Var2}, 2 * \text{Covar}(1,2))$
- Portfolio:
 - Stock 1 - 50%
 - Stock 2 - 50%
 - Highlight Stock 1 and 2, name PortfolioFractions
 - 100% = 100% (separate cells)
 - 1st 100% = Investment Sum
 - 2nd 100% = OneHundredPercent
- Portfolio Expected Return = $\text{SUMPRODUCT}(\text{PortfolioFractions}, \text{ExpectedRealReturn})$
 - Make $\geq$ MinAcceptableReturn (in separate cell)
- Portfolio Risk $\% = ((\text{Stock 1 \%} * \text{STDEV1})^2 + (\text{Stock 2 \%} * \text{STDEV2})^2 + 2 * \text{Stock 1 \%} * \text{Stock 2 \%} * \text{Covariance})^{0.5}$
- Portfolio Risk = $\text{SQRT}(\text{PortfolioRisk}\%^2)$
- Solver
 - Set Objective: PortfolioRisk
 - By Changing Variable Cells: PortfolioFractions
 - Subject to Constraints:
 - InvestmentSum = OneHundredPercent
 - PortfolioExpectedReturn $\geq$ MinAcceptableReturn