

# Mean-Variance Portfolio Optimization using Markowitz's Theory

Click here read the blog post at <http://optimizeyourportfolio.blogspot.com> and for other Financial Modeling spreadsheets

Desired Portfolio Return 0.15 ← Constraint in Solver

Stock Returns

	ATT	GMC	USX	TBILL
ATT	0.111	0.223	0.122	0.05
GMC	0.114	0.46	3.00E-03	0.05
USX	0.323	-0.09	0.111	0.05
TBILL	1.00E-03	-0.107	0.054	0.05
Mean Returns	0.17742	0.216167	0.19625	0.05

Portfolio Allocation

ATT	0.136
GMC	0.392
USX	0.120
TBILL	0.352
Total	1

Values to be changed by Solver

Constraint in Solver

Covariance Matrix

	ATT	GMC	USX	TBILL
ATT	0.041227	0.023	0.030563	3.5E-35
GMC	0.023661	0.048	0.015001	-2.5E-34
USX	0.030563	0.015	0.090306	-1.4E-34
TBILL	3.5E-35	-2E-34	-1.4E-34	5.3E-35

Portfolio Variance

Variances 0.003471 0.009 0.00249 -3.2E-35 0.01425 ←

Value to be minimized

## INSTRUCTIONS

Set your desired portfolio return

Start the Excel Solver and

- Minimize the Portfolio Variance
- Change "By changing variable cells" to the range of cells containing the Portfolio Allocation
- Set the constraints (the total portfolio allocation must add up to one, and the portfolio return should be the desired value)
- Click Solve. You should now find that you Portfolio Allocation has changed.

NOTE: You may need to enable Solver through the File > Options > Add-Ins > Manage menu

# Mean Variance Portfolio Optimization With Excel

**CO Houle**



## **Mean Variance Portfolio Optimization With Excel:**

## **Mean Variance Portfolio Optimization With Excel** Book Review: Unveiling the Power of Words

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