

Optimization Results Report



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Background

Modern Portfolio Theory

Henry Markowitz provides the tools for identifying the portfolio which give the highest return for a particular level of risk (mean-variance portfolio theory)

Total risk of the portfolio can be reduced by diversification – this can be achieved by investing in assets that have low positive correlation, or better still, a negative correlation

He received Nobel prize for Economics in 1990.

PERIOD OF OPTIMIZATION

Start Date =
1-Jan-2014
End Date =
1-Oct-2016

List of securities

'ZDY'
'ZEF'
'ZLB'
'ZCS'

CORRELATION ANALYSIS

Correlation Matrix

	ZDY	ZEF	ZLB	ZCS
ZDY	1	0.11308	0.61646	0.58017
ZEF	0.11308	1	0.20013	0.16184
ZLB	0.61646	0.20013	1	0.59565
ZCS	0.58017	0.16184	0.59565	1

Sorted Correlations

'0.113/ZEF/ZDY'
'0.162/ZCS/ZEF'
'0.2/ZLB/ZEF'
'0.58/ZCS/ZDY'
'0.596/ZCS/ZLB'
'0.616/ZLB/ZDY'

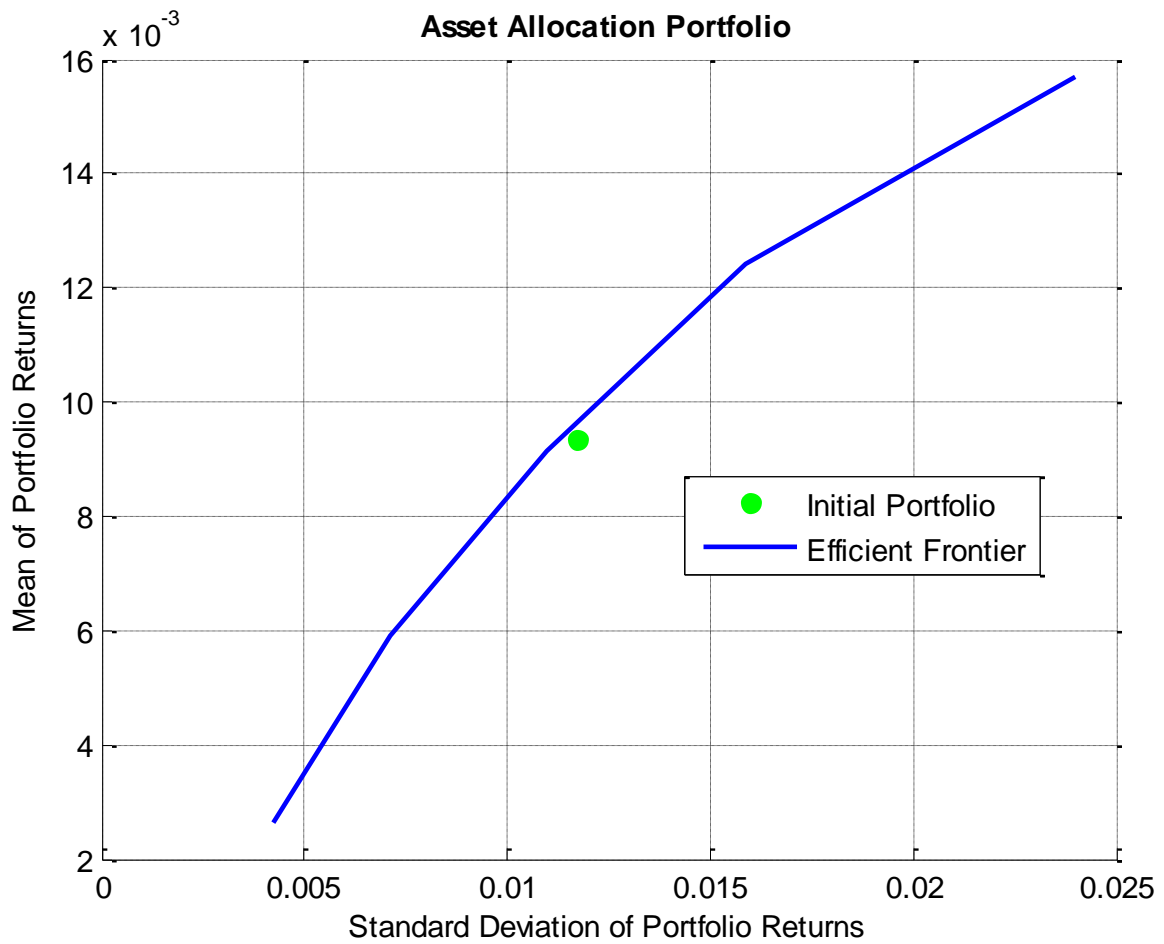
Assets Returns Statistics

	ZDY	ZEF	ZLB	ZCS
Mean	1.5676	0.72665	1.2124	0.23764
Sigma	2.4019	1.3102	2.0262	0.43125
Sharpe	0.65264	0.5546	0.59834	0.55105

Assets Rated by the Market Efficiency (Sharpe Ratio)

'ZCS' 'ZEF' 'ZLB' 'ZDY'
0.5511 0.5546 0.5983 0.6526

PORTFOLIO OPTIMIZATION RESULTS



Weights

	Conservative	Cautious	Balanced	Assertive	Aggressive	Initial
ZDY	0	12.382	24.872	51.242	100	25
ZEF	5.4967	28.921	45.286	31.412	0	25
ZLB	0	4.775	12.945	17.347	0	25
ZCS	94.503	53.922	16.898	0	0	25

PORTFOLIO PERFORMANCE STATISTICS

	Conservative	Cautious	Balanced	Assertive	Aggressive	Initial
Total Growth	8.91	22.16	35.53	49.82	65.14	36.65
Monthly Growth	0.27	0.67	1.08	1.51	1.97	1.11
Yearly Growth	3.24	8.06	12.92	18.12	23.69	13.33
Returns Mean	0.26	0.59	0.92	1.24	1.57	0.98
Returns Std. Dev.	0.43	0.71	1.10	1.59	2.40	1.25
Sharpe Ratio	0.62	0.83	0.83	0.78	0.65	0.78

