

Asset Management: Project HW3

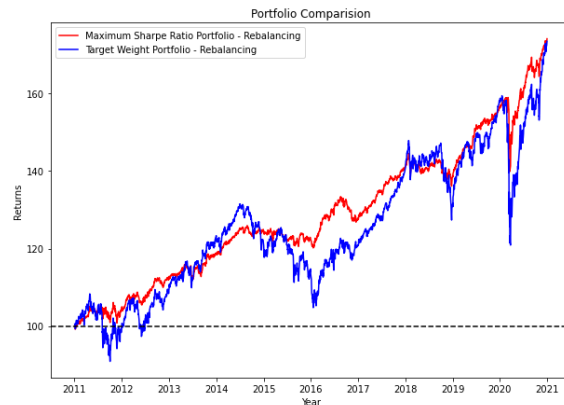
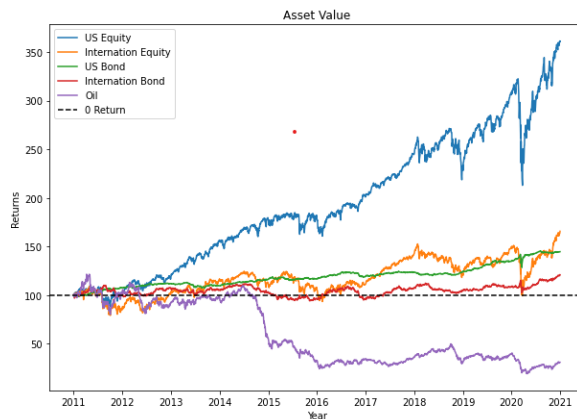
The 45% limit constraint the portfolio created is not the maximum Sharpe ratio portfolio. Even without the constraint, since the expected returns and the risk are changing in real-time the only time the constructed portfolio will be the maximum Sharpe ratio portfolio on purpose will be on rebalancing days.

The maximum Sharpe ratio weights can change as time goes on since the relative risk and expected returns are in flux, the target weight portfolio will always have the same target weights.

A major assumption for these portfolios is that the chosen ETFs and the commodities encompass the entirety of the market. Without this assumption, there could be other securities that would improve the portfolio.

Performance and risk metrics for each asset class:

	Expected Return	SD	Sharpe Ratio	Maximum Drawdown	% High Volatility Days
us_equity	14.30	17.39	0.82	0.76	12.56
int_equity	6.14	18.68	0.33	0.52	16.10
us_bond	3.81	4.01	0.95	0.32	0.20
int_bond	2.07	7.80	0.27	0.22	1.19
oil	-8.33	29.78	-0.28	0.84	35.06



Maximum Sharpe Ratio Portfolio Metrics Target Portfolio Metrics

	values		values
Expected	5.952633	Expected	5.952633
SD	5.453202	SD	5.453202
Sharpe Ratio	1.091585	Sharpe Ratio	1.091585
Drawdown	0.430694	Drawdown	0.430694
Greater than 2% change trading days	0.238474	Greater than 2% change trading days	0.238474