



Markovitz Strategy

strategy description

The Markovitz strategy exploits the principles of Harry Markovitz's modern portfolio theory to build an internally diversified portfolio which is invested in our Bernoulli, Galton and Boltzmann strategies in proportions of 1/3 each. All three are automatic, algorithmic strategies based on mathematical methods and artificial intelligence. The moderate correlations between these three components ensure steady, significant returns with diminished risk (volatility) and smaller maximum drawdowns.

statistics (2008–2020)

Average net return	: 18.08%	(S&P500: 9.06%)
Average volatility	: 6.03%	(S&P500: 15.01%)
Average Sharpe Ratio	: 2.58	
Maximum draw-down	: 2.58%	
Live trading	: Bernoulli since August 2012 / Galton since Mai 2016 / Boltzmann since June 2019	

historical performance

Year	P/L strategy	P/L S&P500	Vola strategy	Vola S&P500	Max. drawdown	Sharpe ratio
2008	55.41%	-38.49%	15.17%	20.99%	2.02%	3.52
2009	31.87%	23.45%	6.56%	22.31%	0.95%	4.79
2010	20.47%	12.78%	5.84%	19.31%	0.67%	3.45
2011	15.45%	0.00%	7.78%	15.97%	2.58%	1.96
2012	12.86%	13.32%	4.70%	10.58%	0.99%	2.70
2013	18.40%	29.73%	5.89%	8.70%	2.57%	3.10
2014	3.64%	11.41%	3.96%	8.09%	1.62%	0.89
2015	12.45%	-0.76%	3.94%	12.99%	1.21%	3.08
2016	12.17%	9.53%	4.05%	10.20%	0.59%	2.86
2017	7.30%	19.41%	4.56%	3.80%	1.79%	1.34
2018	19.71%	-7.71%	7.43%	15.30%	2.47%	2.34
2019	13.35%	28.88%	3.57%	12.96%	0.36%	3.17
2020	11.95%	16.26%	5.00%	34.36%	1.28%	2.32

Key facts

Currency	: USD
Instruments	: SPY ETF , VXX ETN and single stocks of the S&P100 index
Liquidity	: daily
Risk factors	: long positions, short positions, no derivatives
Trading	: algorithmic (with human surveillance)