# 7sisters Ultradefensive 10 stocks portfolio

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Direct link: https://www.portfolio123.com/app/r2g/summary?id=1419294

Author's note:
For more information please leave a comment on the website or send me an email through portfolio123.com

# 7sisters Ultradefensive 10 stocks - Introduction

"7sisters Ultradefensive 10 stocks" is a defensive equity portfolio based on an algorithm developed on portfolio123.com. It is primarily oriented towards capital preservation, in particular during economic downturns. Given the potential of a recession and stock market declines over the next 12-18 month (as of March 2016), it is an interesting period to test this trading system.

Some of the model goals are:
- in-line performance during times of economic expansion;
- outperformance during recessions and subsequent recoveries;
- relatively low drawdowns;
- high liquidity (minimum $ 10 MM);
- moderate trading requirement (<900% turnover per annum).

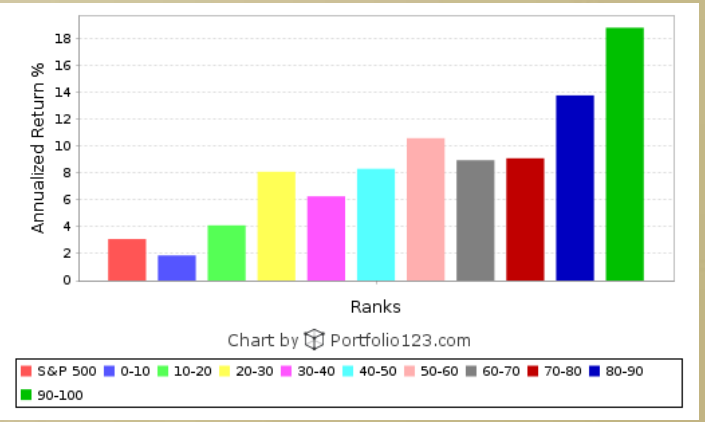
The stock picking is based on a ranking system and several buy rule filters. The stock universe is limited to the defensive S&P500 sectors healthcare, staples, telecom & utilities, while the IEF (7-10 year bond ETF) serves as hedge instrument.

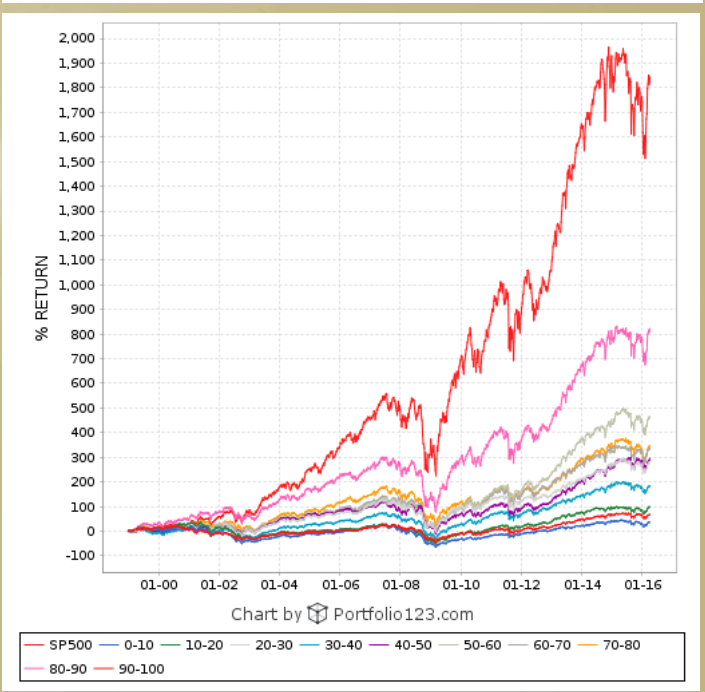
With high liquidity of the underlying universe this model is suited as defensive strategy for both individual investors and small mutual funds and allows conservative capital allocation without considerable slippage.

# 7sisters Ultradefensive 10 stocks – Model setup

"7sisters Ultradefensive 10 stocks" has the following setup:

- a universe limited to defensive sectors (healthcare, staples, telecom & utilities) within the S&P500; corresponds to approximately 130 stocks;
- a 10 factor ranking system (based on weekly rebalance shown on the right); the uppermost quintile is considered in the buy rule Rank > 79;
- weekly rebalance;
- variable slippage;
- 6 buy rules;
- 2 sell rules & mergers not allowed;
- 2 rules triggering hedge entry and exit based on 2 custom series; 50% of total assets are invested in IEF during hedge periods.

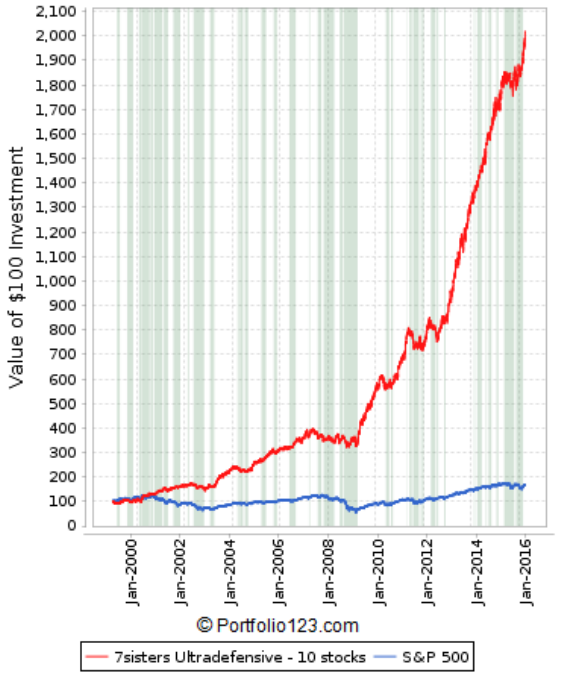


# 7sisters Ultradefensive 10 stocks – Backtest statistics

7sisters Ultradefensive - 10 stocks

Summary | Rebalance | Holdings | Transactions | Trading System | Statistics




**Performance Graphs:** Basic Interactive < / > embed

**General Info**

| | |
|---|---|
| Inception Date | 01/02/99 |
| Last Rebalance Date | 03/28/16 |
| Days Since Last Rebalance | 6 |
| Rebalance Frequency | Weekly |
| Rebalance Method | Automatic |
| Benchmark | S&P 500 |
| Universe | S&P 500 Index |
| Ranking System | 7sisters Defensive Titans |

**Quick Stats as of 4/1/2016**

| | |
|---|---|
| Total Market Value (inc. Cash) | $ 502,294.60 |
| Cash | $ 263.75 |
| Number of Positions | 10 |
| Total Return | 1,909.18% |
| Benchmark Return | 68.62% |
| Active Return | 1,840.56% |
| Annualized Return | 19.00% |
| Annual Turnover | 754.14% |
| Max Drawdown | -18.53% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (1022/1670) 61.20% |
| Sharpe Ratio | 1.36 |
| Correlation with S&P 500 | 0.56 |

**Annualized Performance by Calendar Year**

| Return (%) | 1998* | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | N/A | 3.78 | 40.03 | 13.03 | -3.11 | 49.12 | 10.20 | 18.00 | 14.48 | 0.23 | 0.43 | 53.74 | 18.49 | 12.39 | 15.43 | 56.69 | 29.31 | 9.02 | N/A |
| Benchmark | N/A | 19.53 | -10.14 | -13.04 | -23.37 | 26.38 | 8.99 | 3.00 | 13.62 | 3.53 | -38.49 | 23.45 | 12.78 | -0.00 | 13.41 | 29.60 | 11.39 | -0.73 | N/A |
| **Excess** | **N/A** | **-15.74** | **50.16** | **26.07** | **20.26** | **22.73** | **1.21** | **15.00** | **0.86** | **-3.30** | **38.92** | **30.28** | **5.71** | **12.40** | **2.03** | **27.09** | **17.92** | **9.75** | **N/A** |

# 7sisters Ultradefensive 10 stocks – summary statistics

| Main Parameters | |
|---|---|
| Starting Capital | $25,000.00 |
| Total Cash Added | $-2.20 |
| Ending Market Value | $502,294.60 |
| Start Date | 01/02/99 |
| End Date | 04/01/16 |
| Days Since Inception | 6,299 |

| Trading Summary | |
|---|---|
| Total Buy/Short Trades | 1,643 |
| Total Sell/Cover Trades | 1,718 |
| Average Annual Turnover | 754.14 % |
| Total Trading Cost | $53,801.00 |
| Realized Winners | 61.02 % |
| Unrealized Winners | 90.00 % |
| Overall Winners | 61.20 % |

| | Realized | | | Unrealized | | |
|---|---|---|---|---|---|---|
| | All | Winners | Losers | All | Winners | Losers |
| Trades | 1,660 | 1,013 | 647 | 10 | 9 | 1 |
| Avg Return | 2.37 % | 7.28 % | -6.91 % | 5.16 % | 6.08 % | -3.49 % |
| Avg Days Held | 49.76 | 49.63 | 49.97 | 55.80 | 54.56 | 67.00 |
| Total Amount $ | 408,657.17 | 821,212.70 | -412,555.53 | 24,651.08 | 26,242.25 | -1,591.17 |
| Biggest Winner/Loser $ | - | 8,773.81 | -6,099.05 | - | 6,322.63 | -1,591.17 |
| Biggest Winner/Loser | - | 51.98 % | -48.99 % | - | 12.39 % | -3.49 % |

| Risk Measurements - Trailing 3 Year | Model | S&P 500 |
|---|---|---|
| Total Return (%) | 105.64 | 32.69 |
| Annualized Return (%) | 27.16 | 9.88 |
| Max Drawdown (%) | -6.23 | -14.16 |
| Monthly Samples | 35 | 35 |
| Standard Deviation (%) | 8.02 | 11.47 |
| Sharpe Ratio | 2.84 | 0.81 |
| Sortino Ratio | 3.71 | 1.15 |
| Correlation with Benchmark | 0.72 | - |
| R-Squared | 0.52 | - |
| Beta | 0.50 | - |
| Alpha (%) (annualized) | 19.69 | - |

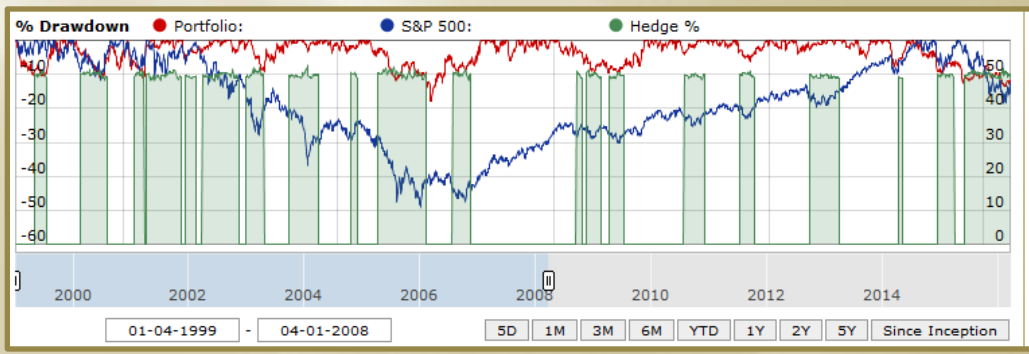
| Risk Measurements - Inception 01/02/99 | Model | S&P 500 |
|---|---|---|
| Total Return (%) | 1,909.18 | 68.62 |
| Annualized Return (%) | 19.00 | 3.08 |
| Max Drawdown (%) | -18.53 | -56.78 |
| Monthly Samples | 207 | 207 |
| Standard Deviation (%) | 11.96 | 15.04 |
| Sharpe Ratio | 1.36 | 0.15 |
| Sortino Ratio | 1.97 | 0.20 |
| Correlation with Benchmark | 0.56 | - |
| R-Squared | 0.32 | - |
| Beta | 0.45 | - |
| Alpha (%) (annualized) | 16.33 | - |

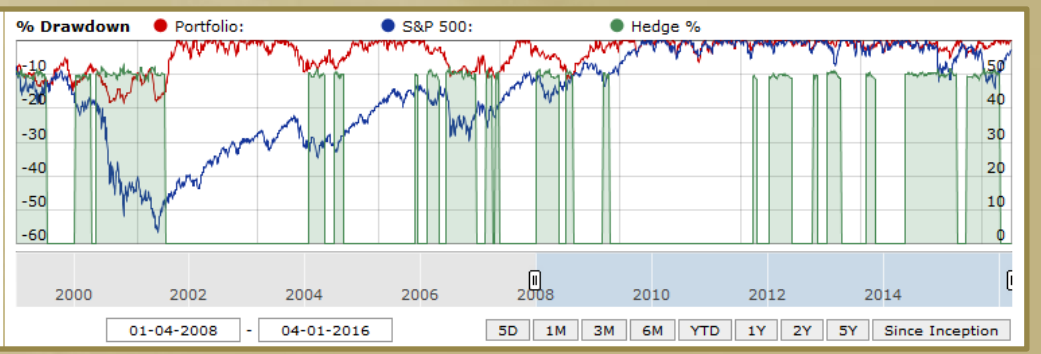
# 7sisters Ultradefensive 10 stocks – Market timing & hedge

This model uses a market timing which detects weakness of a larger universe of stocks based on two proprietary custom series generated at Portfolio123. This weakness can occur both in uptrending and downtrending markets. It is independent of the benchmarks' performance and thus not curve-fitted to a benchclose moving average.

The hedge is triggered when the weakness is detected. As the hedge is triggered, the model sells 50% of current equities and invests the resulting cash in IEF (7-10 year bond ETF). When the model exits the hedge, the cash from the IEF sale is used to either double the share of existing stock holdings or to buy new ones based on the ranking recommendations.

Over the entire simulation period the hedge was active 53% of the time (see green graph below). 58% of the hedge periods ended with a positive investment in IEF with an average 2.3% return.



# 7sisters Ultradefensive 10 stocks – Rolling test

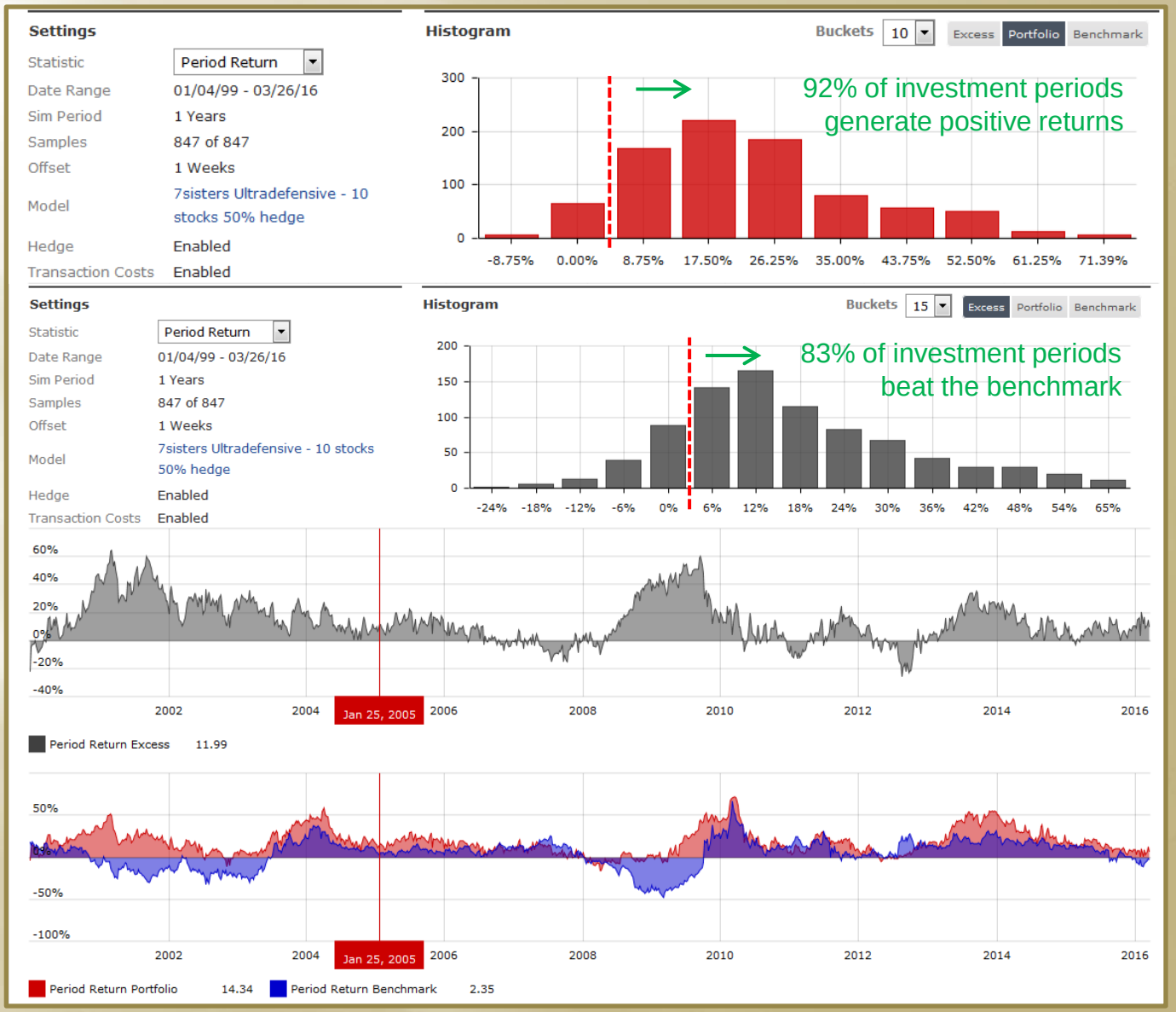
A rolling test is a backtest intended to illustrate the robustness of an algorithm by changing the start date and the investment period of a simulation.

The following page gives a Portfolio123 rolling test summary for 7sisters Ultradefensive 10 stocks model. In this test an industry-standard 1 year investment period was used. The simulation start date of 4 January 1999 was shifted in one week steps, resulting in a total of 847 samples (investment periods).

The two histograms show a split-down of portfolio returns (red bars) and excess returns against the S&P500 benchmark (grey bars). Around 90% of investment periods result in positive returns and over 80% of samples beat the benchmark performance. In order to decrease the risk of negative returns from 10% to >1% in the simulation, an increase in the investment period from 1 year to 3 years is required.

In the graphs underneath the histograms are the results of the 847 individual investment periods plotted along a time series. For example, at the red line with the label “Jan,25 2005” the returns of a 1 year investment starting on 26 Jan 2004 are plotted. For this sample we can see that the excess return was 12% (grey graph), the portfolio return was 14.3% (red graph) and the benchmark return was 2.3% (blue graph).

# 7sisters Ultradefensive 10 stocks – Rolling test

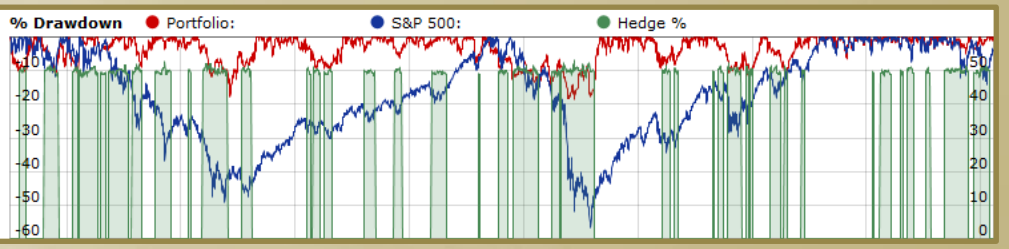


# 7sisters Ultradefensive 10 stocks – Hedging alternatives

All else being equal let's test a selection of alternative hedge options:

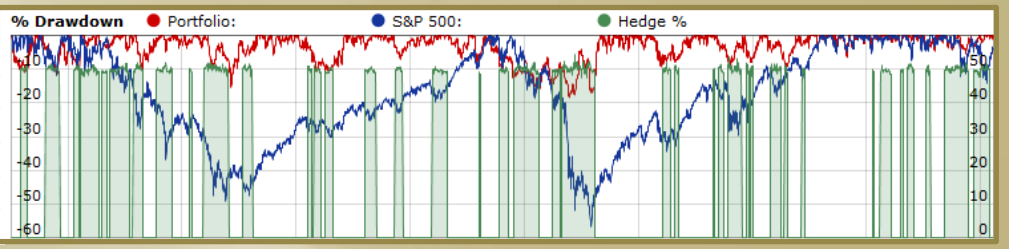
**IEF** (default)
iShares 7-10 year
Treasury Bond ETF

| | |
|---|---|
| Annualized Return | 18.82% |
| Annual Turnover | 753.37% |
| Max Drawdown | -18.53% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (1021/1670) 61.14% |
| Sharpe Ratio | 1.34 |
| Correlation with S&P 500 | 0.56 |



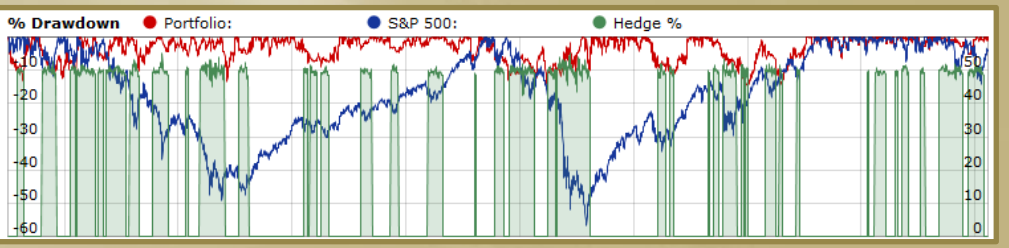

**TLT**
iShares 20 plus year
Treasury Bond ETF

| | |
|---|---|
| Annualized Return | 19.42% |
| Annual Turnover | 751.75% |
| Max Drawdown | -18.14% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (1032/1679) 61.47% |
| Sharpe Ratio | 1.33 |
| Correlation with S&P 500 | 0.49 |



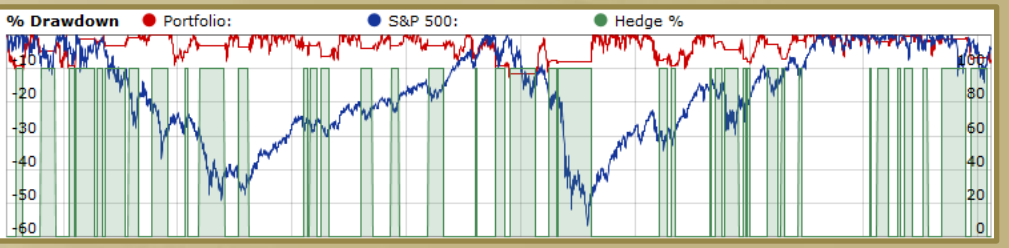

**SH**
ProShares Short
S&P500

| | |
|---|---|
| Annualized Return | 17.24% |
| Annual Turnover | 758.92% |
| Max Drawdown | -14.60% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (1038/1708) 60.77% |
| Sharpe Ratio | 1.26 |
| Correlation with S&P 500 | 0.25 |




Go to **cash**. This results in the lowest turnover & MDD, but also in a lower return.

| | |
|---|---|
| Annualized Return | 13.01% |
| Annual Turnover | 520.97% |
| Max Drawdown | -12.56% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (587/927) 63.32% |
| Sharpe Ratio | 1.07 |
| Correlation with S&P 500 | 0.43 |



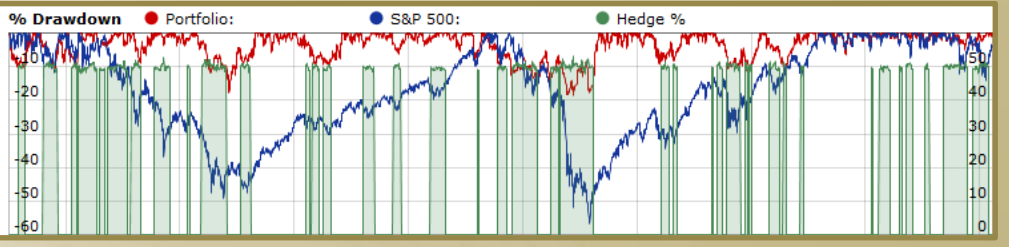
# 7sisters Ultradefensive 10 stocks – Alternative universes

All else being equal let's test the algo's robustness by changing the universe:

Overlap analysis

**S&P500** (default)

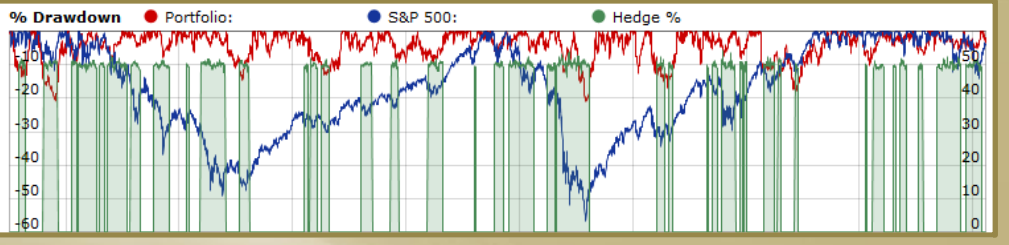
| | |
|---|---|
| Annualized Return | 18.82% |
| Annual Turnover | 753.37% |
| Max Drawdown | -18.53% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (1021/1670) 61.14% |
| Sharpe Ratio | 1.34 |
| Correlation with S&P 500 | 0.56 |




| Holdings 03/28/16 |
|---|
| MNK |
| KR |
| AET |
| VZ |
| GILD |
| PDCO |
| HRL |
| ABBV |
| CERN |
| ESRX |

**S&P1500**

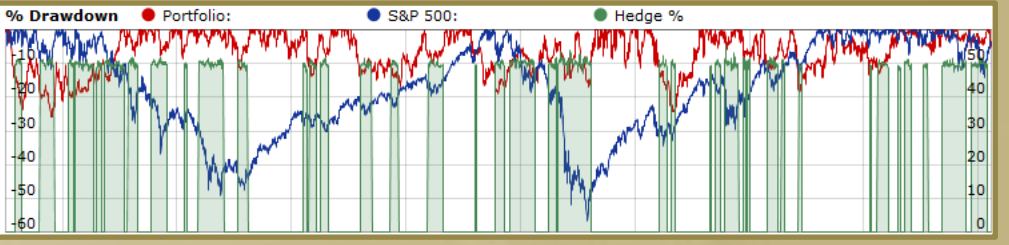
| | |
|---|---|
| Annualized Return | 21.75% |
| Annual Turnover | 1,011.58% |
| Max Drawdown | -20.96% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (1325/2199) 60.25% |
| Sharpe Ratio | 1.23 |
| Correlation with S&P 500 | 0.38 |




| |
|---|
| SPTN |
| GILD |
| CCRN |
| ENR |
| MDRX |
| CRY |
| ABBV |
| MED |
| ESRX |
| CPSI |

**PRussell 3000**

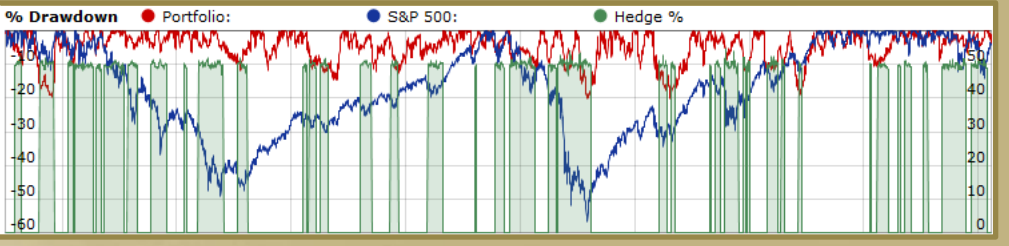
| | |
|---|---|
| Annualized Return | 22.90% |
| Annual Turnover | 1,158.17% |
| Max Drawdown | -26.02% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (1468/2483) 59.12% |
| Sharpe Ratio | 1.03 |
| Correlation with S&P 500 | 0.40 |




| |
|---|
| CRY |
| SPTN |
| VG |
| ABBV |
| PRAH |
| GILD |
| MDRX |
| PINC |
| GTS |
| ESRX |

**S&P400** (Midcap) & **S&P600** (Smallcap)

| | |
|---|---|
| Annualized Return | 21.21% |
| Annual Turnover | 1,026.45% |
| Max Drawdown | -20.21% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (1324/2212) 59.86% |
| Sharpe Ratio | 1.10 |
| Correlation with S&P 500 | 0.40 |




| |
|---|
| ENTA |
| SPTN |
| WCG |
| CNL |
| MDRX |
| CCRN |
| CRY |
| CPSI |
| CNC |
| AMAG |

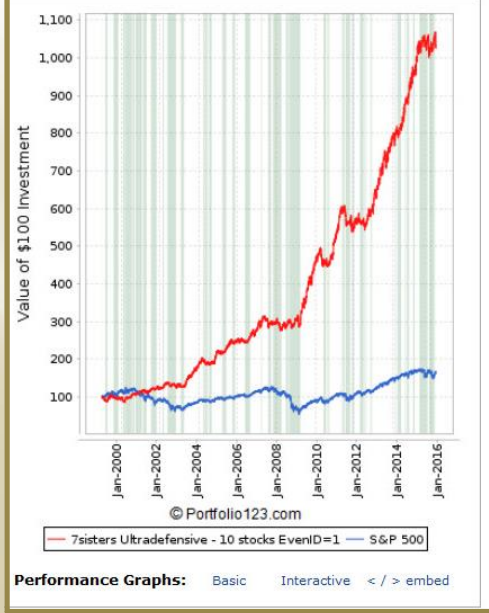
# 7sisters Ultradefensive 10 stocks – EvenID test

Next to the rolling test and alternative universe test, this last robustness test uses the EvenID function on portfolio123. It splits the universe in half by applying one of the following buy rules: EvenID=0 or EvenID=1. If the algorithm is robust, both halves should produce approximately the same performance.

So all else being equal, here the results of the split S&P500 universe:

7sisters Ultradefensive - 10 stocks EvenID=1

Summary | Re-Run | Holdings | Transactions | Trading System | Statistics



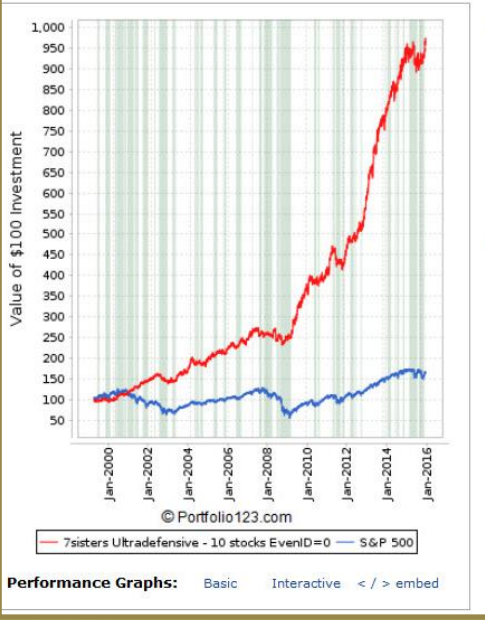

Performance Graphs: Basic Interactive < / > embed

| General Info | |
|---|---|
| Inception Date | 01/02/99 |
| Last Rebalance Date | 03/21/16 |
| Days Since Last Rebalance | 5 |
| Rebalance Frequency | Weekly |
| Benchmark | S&P 500 |
| Universe | S&P 500 Index |
| Ranking System | 7sisters Defensive Titans |

| Quick Stats as of 3/25/2016 | |
|---|---|
| Total Market Value (inc. Cash) | $ 256,751.66 |
| Cash | $ 99,218.41 |
| Number of Positions | 6 |
| Total Return | 927.01% |
| Benchmark Return | 65.63% |
| Active Return | 861.38% |
| Annualized Return | 14.48% |
| Annual Turnover | 672.90% |
| Max Drawdown | -17.56% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (870/1472) 59.10% |
| Sharpe Ratio | 1.15 |
| Correlation with S&P 500 | 0.53 |

7sisters Ultradefensive - 10 stocks EvenID=0

Summary | Re-Run | Holdings | Transactions | Trading System | Statistics




Performance Graphs: Basic Interactive < / > embed

| General Info | |
|---|---|
| Inception Date | 01/02/99 |
| Last Rebalance Date | 03/21/16 |
| Days Since Last Rebalance | 5 |
| Rebalance Frequency | Weekly |
| Benchmark | S&P 500 |
| Universe | S&P 500 Index |
| Ranking System | 7sisters Defensive Titans |

| Quick Stats as of 3/25/2016 | |
|---|---|
| Total Market Value (inc. Cash) | $ 240,800.83 |
| Cash | $ 96,385.10 |
| Number of Positions | 6 |
| Total Return | 863.20% |
| Benchmark Return | 65.63% |
| Active Return | 797.57% |
| Annualized Return | 14.05% |
| Annual Turnover | 613.53% |
| Max Drawdown | -15.20% |
| Benchmark Max Drawdown | -56.78% |
| Overall Winners | (784/1306) 60.03% |
| Sharpe Ratio | 1.26 |
| Correlation with S&P 500 | 0.50 |

# 7sisters Ultradefensive 10 stocks – Model comparison

Lastly, a two page comparison of this model with Keating's Ultra Defensive Portfolio. The latter is the Portfolio123 Smart Alpha model with the highest out-of-sample Sharpe Ratio (2.12) as of 27 March 2016.

Below is a risk statistics summary of the two models:
7SIS - 7sisters Ultradefensive 10 stocks
KEAT - Keating's Ultra Defensive Portfolio
Model - a book combining both portfolios with equal weight

The next page illustrates backtest vs real performance for the last two years.

**Risk Measurements - Trailing 3 Year**

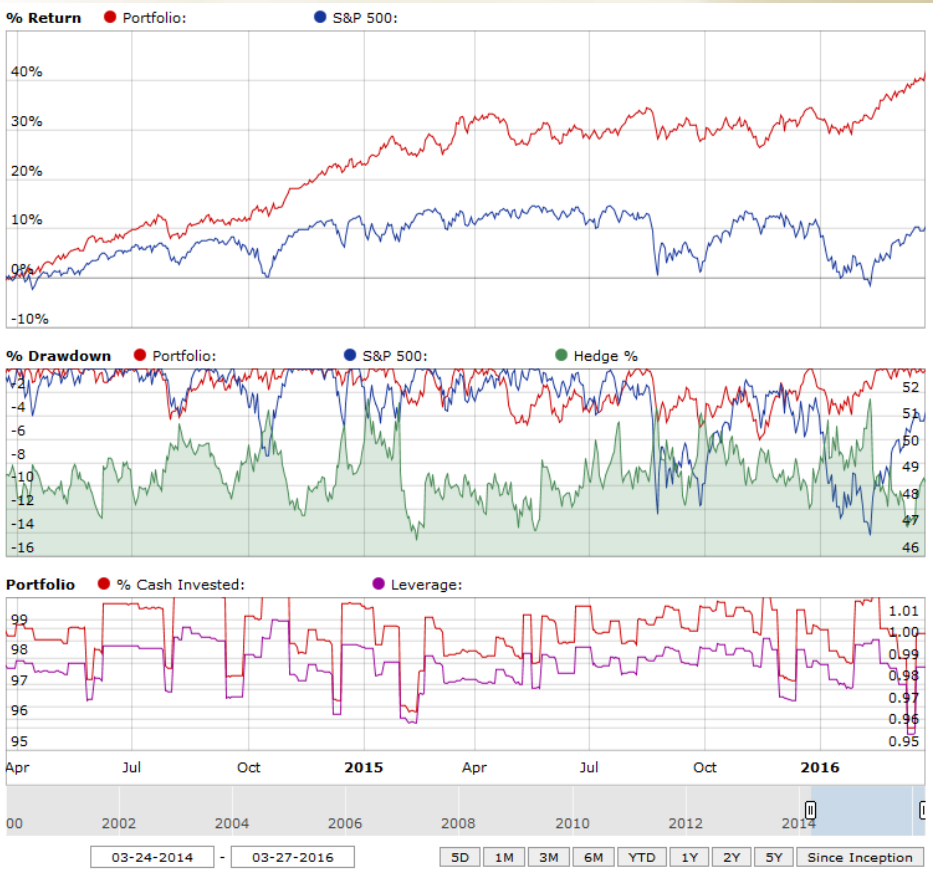
| | Model | S&P 500 | KEAT | 7SIS |
|---|---|---|---|---|
| Total Return (%) | 88.99 | 32.69 | 72.90 | 105.64 |
| Annualized Return (%) | 23.63 | 9.88 | 20.02 | 27.16 |
| Max Drawdown (%) | -4.92 | -14.16 | -6.00 | -6.23 |
| Monthly Samples | 35 | 35 | 35 | 35 |
| Standard Deviation (%) | 7.05 | 11.47 | 7.77 | 8.02 |
| Sharpe Ratio | 2.86 | 0.81 | 2.25 | 2.84 |
| Sortino Ratio | 3.73 | 1.15 | 3.07 | 3.71 |
| Correlation with Benchmark | 0.70 | - | 0.52 | 0.72 |
| R-Squared | 0.49 | - | 0.28 | 0.52 |
| Beta | 0.43 | - | 0.36 | 0.50 |
| Alpha (%) (annualized) | 17.40 | - | 15.11 | 19.69 |

**Risk Measurements - Inception 12/31/99**

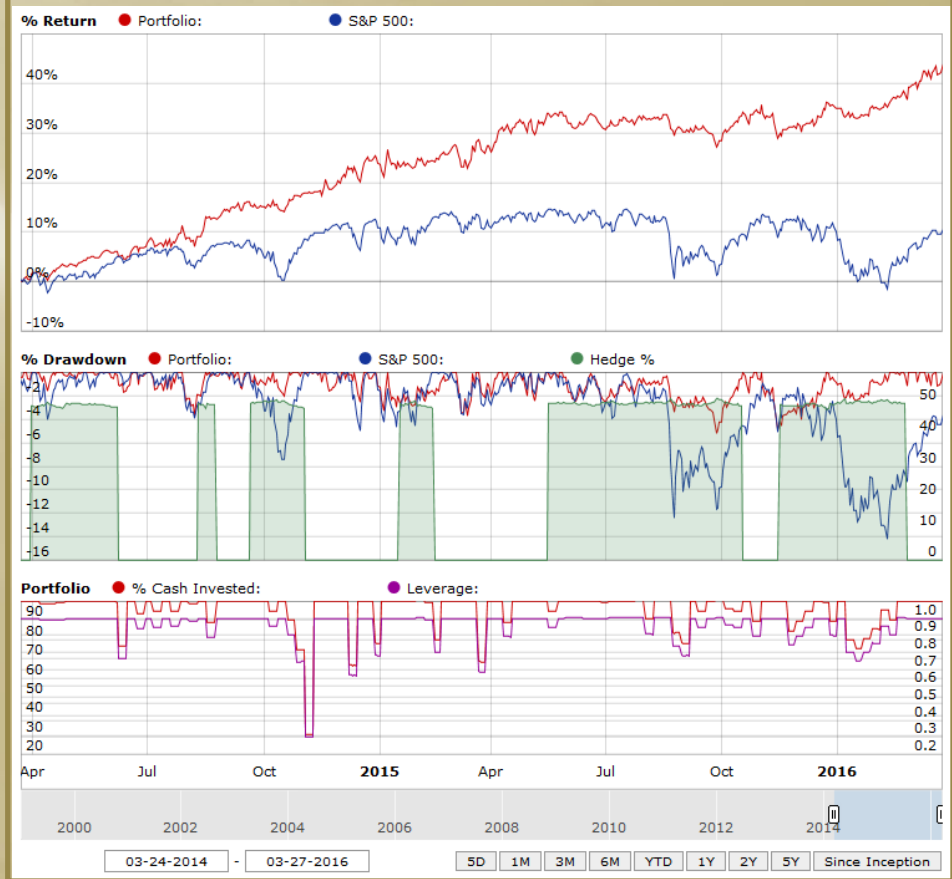
| | Model | S&P 500 | KEAT | 7SIS |
|---|---|---|---|---|
| Total Return (%) | 1,410.60 | 41.08 | 1,025.68 | 1,835.98 |
| Annualized Return (%) | 18.18 | 2.14 | 16.06 | 20.00 |
| Max Drawdown (%) | -16.85 | -56.78 | -19.64 | -18.53 |
| Monthly Samples | 195 | 195 | 195 | 195 |
| Standard Deviation (%) | 9.24 | 15.14 | 9.61 | 11.65 |
| Sharpe Ratio | 1.67 | 0.10 | 1.42 | 1.48 |
| Sortino Ratio | 2.28 | 0.13 | 1.93 | 2.14 |
| Correlation with Benchmark | 0.57 | - | 0.38 | 0.58 |
| R-Squared | 0.32 | - | 0.15 | 0.34 |
| Beta | 0.34 | - | 0.24 | 0.45 |
| Alpha (%) (annualized) | 15.99 | - | 14.16 | 17.84 |

# 7sisters Ultradefensive 10 stocks – Model comparison

**Keating's Ultra Defensive Portfolio**
Out-of-sample performance since launch
Model has 50/50 split of TLT and equities (20 stocks)
TLT is used as constant hedge.




**7sisters Ultradefensive 10 stocks**
Simulated performance prior to launch
Model has 10 stocks and uses intermittent hedge
IEF is used as hedge at 50% of total holdings.



# 7sisters Ultradefensive 10 stocks – Disclaimers

## Personal disclaimer

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