

Implementing Low Volatility ETF, Mutual Fund and Stock Portfolios

Introductory Comments

Low Volatility ETFs

Mutual Funds with Volatility Control

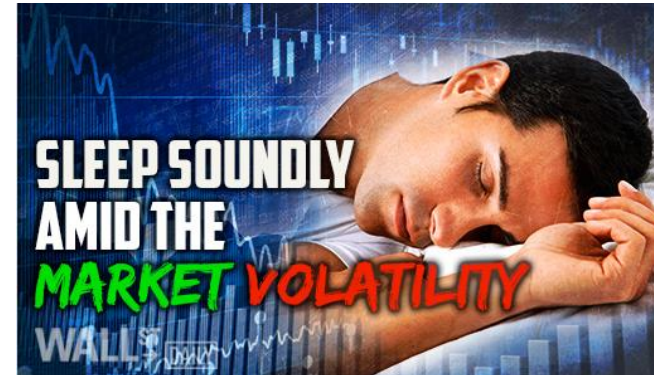
Low Volatility Stock Screens

Doing the Trades

Takeaways

Q&A

References



Legal Disclaimer And Risk Disclosure

These materials are for educational and entertainment purposes only and are neither a solicitation, nor an offer to buy or sell any financial instrument. All information provided here is the personal opinion of the authors. The authors, AAI, AAI-Silicon Valley, AAI-SV-CI-MI Group leaders and members, make no claim that the information in any of these presentations is correct. Under no circumstances should any of the information in these presentations be taken as personal or individual trading advice. Past performance and/or hypothetical results of any trading method are not indicative of future results. Trading and investing in any financial instrument carries high levels of risk and may not be suitable for all investors. You should be aware of all the risks associated with trading, and seek advice from a financial professional, if you have any doubts. The authors, AAI, AAI-Silicon Valley, AAI-SV-CI-MI Group leaders and members, will not assume any responsibility whatsoever for the actions of the reader nor financial losses that may result from the use or misuse of the information presented.

Low Volatility ETFs: The Basics

Low Volatility ETF Objective:

- Provide broad exposure to companies that have demonstrated the lowest volatility over the prior year - not necessarily to match the return of the S&P 500



OBJECTIVE

S&P 500 Lower Volatility (SPLV)

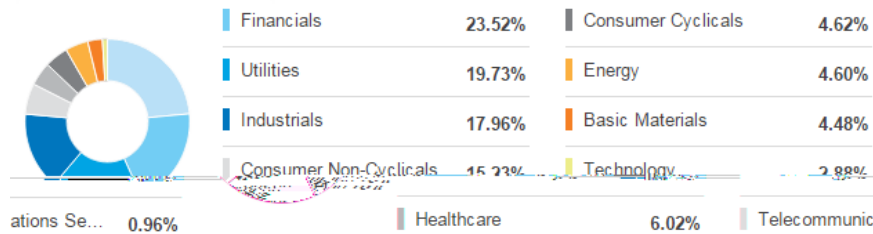
- Tracks the S&P 500 Lower Volatility Index
- Contains 100 S&P 500 stocks that had the lowest volatility over the past year
- Weighted by the inverse of volatility (higher volatility, smaller weight)
- Rebalanced quarterly.
- Expense ratio of 0.25%. Yields 2.5%



SPLV

PowerShares S&P 500 Low Volatility

SPLV Top 10 Sectors



Low Volatility ETFs: The Basics

- **Mid Cap Volatility (XMLV)**

- Contains 80 S&P 400 stocks that had the lowest volatility over the past year
- Weighted by the inverse of volatility (higher volatility, smaller weight)
- Rebalanced quarterly
- Expense ratio of 0.26%. Yields 1.9%

XMLV

PowerShares S&P MidCap Low Volatility

XMLV Top 10 Sectors



Financials	40.30%	Technology	5.06%
Utilities	17.94%	Consumer Non-Cyclicals	2.69%
Industrials	15.44%	Consumer Cyclicals	1.16%
Healthcare	8.86%		
Basic Materials	8.54%		

- **Small Cap Volatility (XSLV)**

- Contains 120 S&P 600 stocks that had the lowest volatility over the past year
- Weighted by the inverse of volatility (higher volatility, smaller weight)
- Rebalanced quarterly
- Expense ratio of 0.25%. Yields 2.3%

XSLV

PowerShares S&P SmallCap Low Volatility

XSLV Top 10 Sectors



Financials	52.98%	Technology	4.10%
Industrials	14.67%	Healthcare	3.64%
Utilities	11.27%	Basic Materials	1.74%
Consumer Cyclicals	6.07%	Energy	0.79%
Consumer Non-Cyclicals	4.73%		

Low Volatility ETFs: The Basics

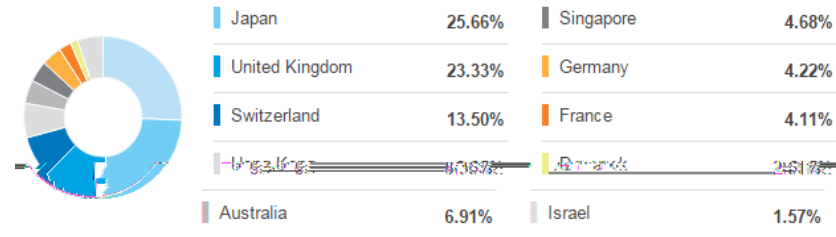
- **MSCI EAFE Low Volatility (EFAV)**

- Contains 191 stocks in the EAFE index with the lowest volatility over the past year
- Rebalanced twice per year
- Expense ratio of 0.25%. Yields 2.5%

EFAV

iShares MSCI EAFE Minimum Volatility

EFAV Top 10 Countries [View All](#)



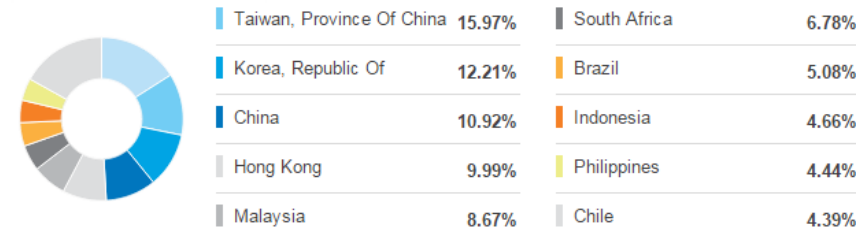
- **Small Cap Volatility (EEMV)**

- Contains 200 stocks in the EAFE index with the lowest volatility over the past year
- Rebalanced twice per year
- Expense ratio of 0.25%. Yields 2.5%

 **EEMV**

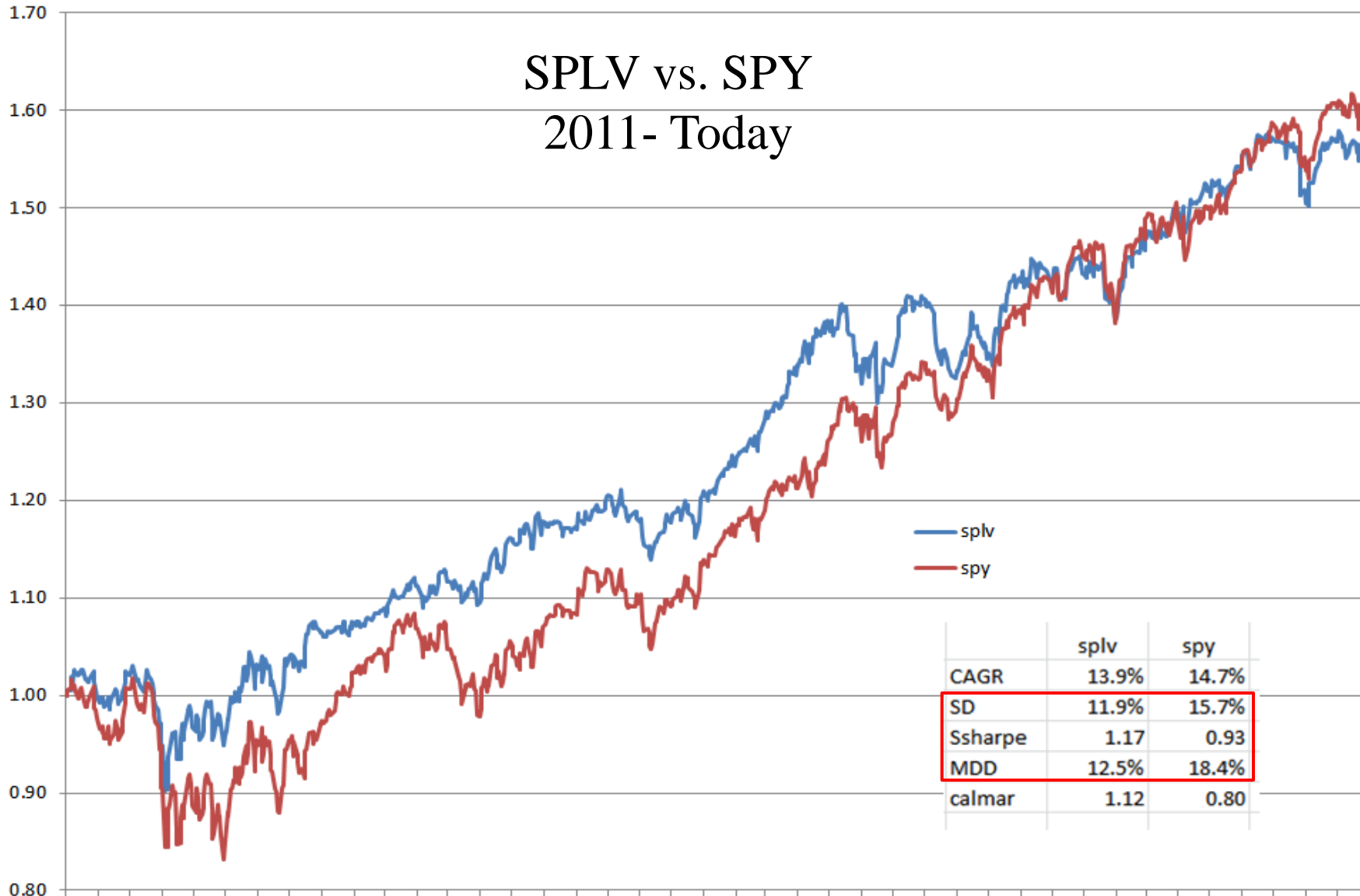
iShares MSCI Emerging Markets Minimum Volatility

EEMV Top 10 Countries [View All](#)



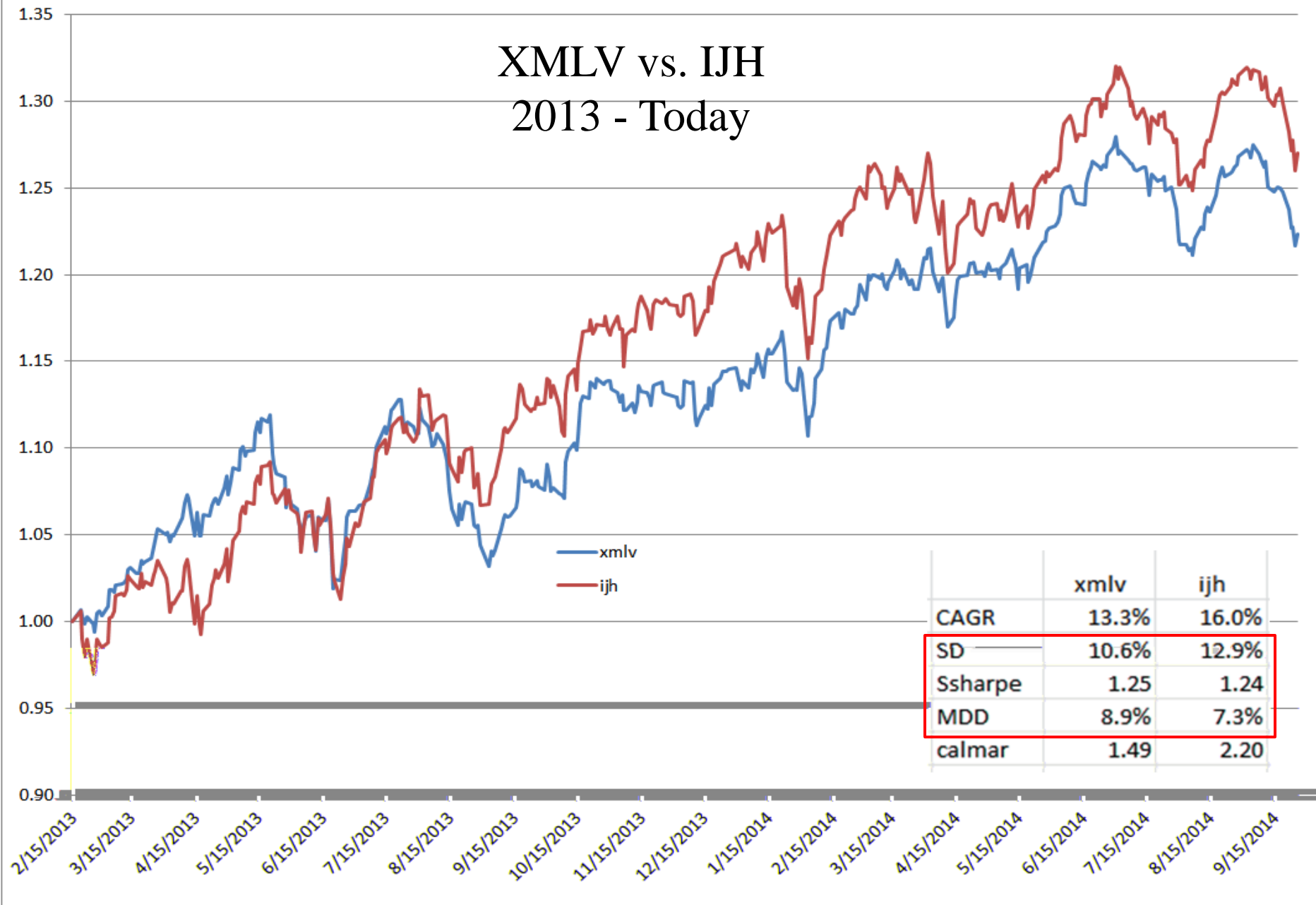
SPLV vs. SPY

2011- Today



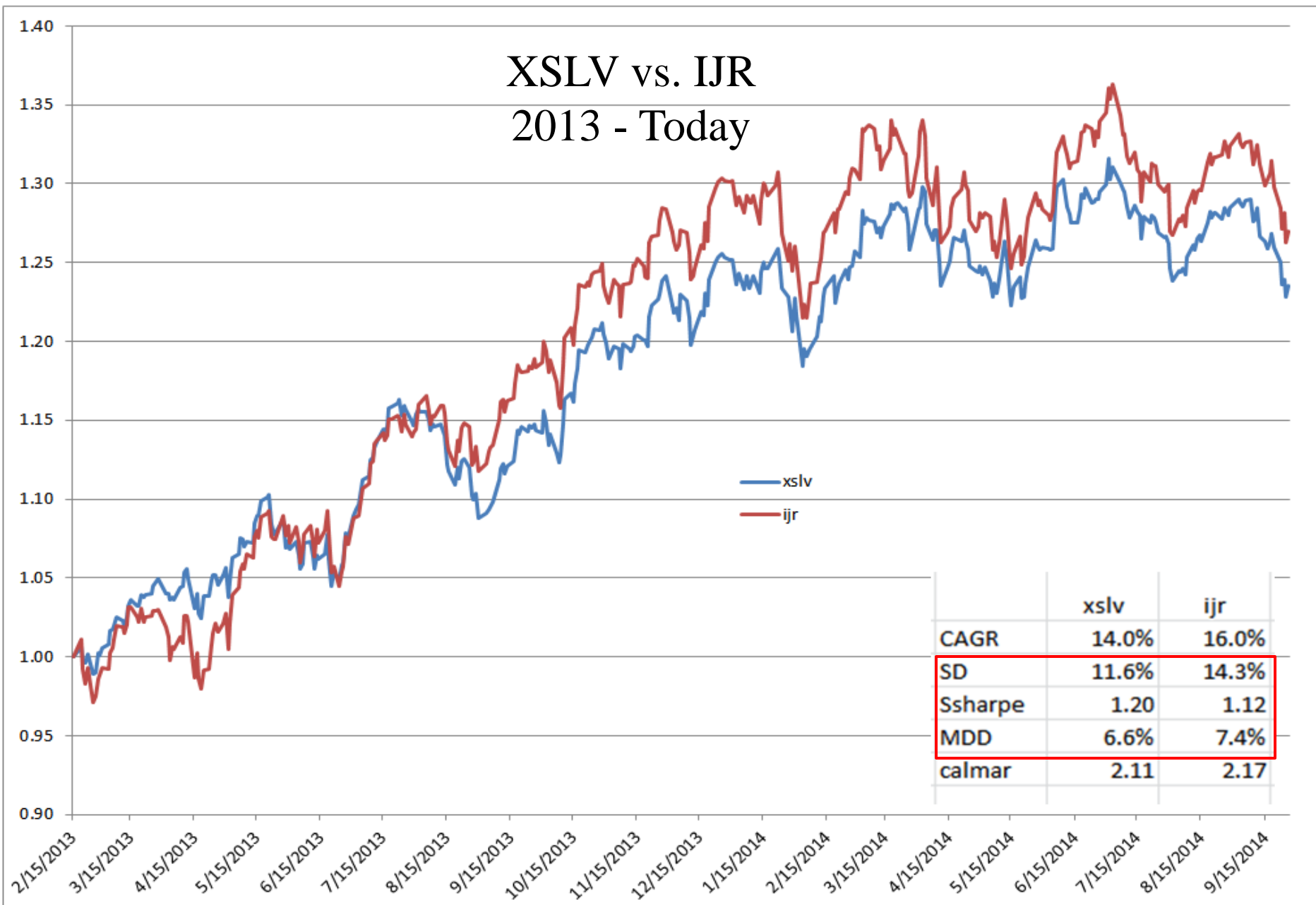
XMLV vs. IJH

2013 - Today



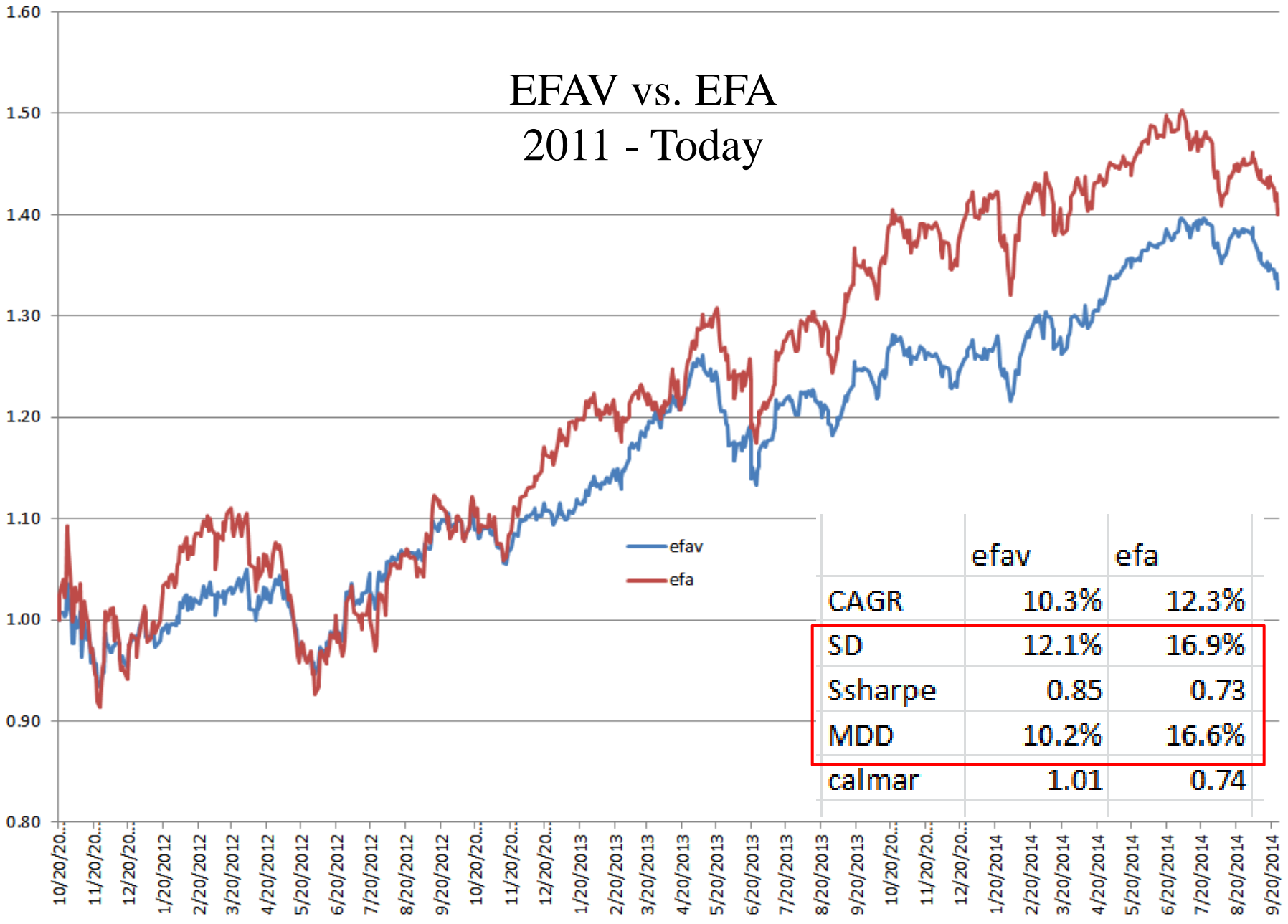
XSLV vs. IJR

2013 - Today



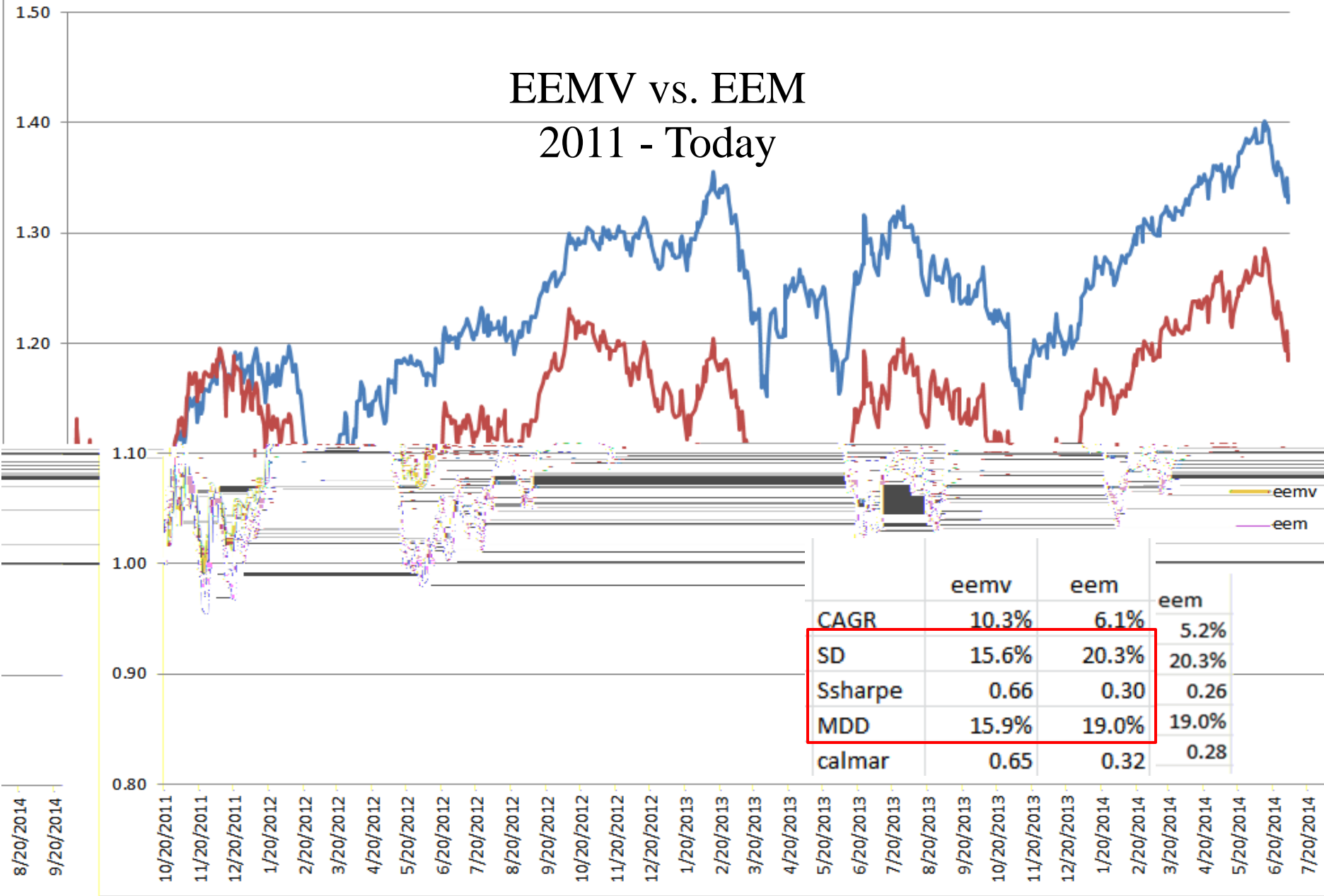
EFAV vs. EFA

2011 - Today



EEMV vs. EEM

2011 - Today



Criticisms of Low Volatility ETFs

- Short histories (3 years or less)
-
- Violates EMH/CAPM
- Value/dividend ETFs in disguise
- Low Volatility is a hot topic: Warning sign??
 - BlackRock survey: Market volatility is one of the most popular topics clients bring up with their advisers.
 - Research Affiliates: Total assets invested in low-volatility strategies have gone from \$8.7 billion in 2010 to \$58.5 billion in 2013.
- Over valuation in lowest 20% of stocks (by beta)
- Over-
 - Healthcare, consumer staples, utilities
- Susceptible to sharp drops
- Studies show low volatility returns are cyclical

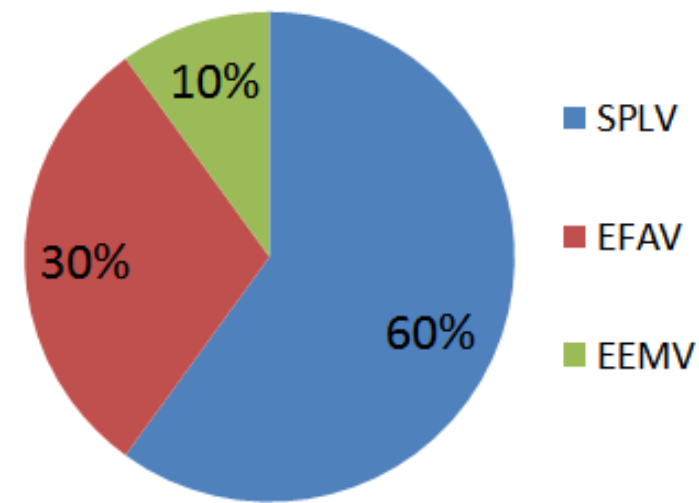
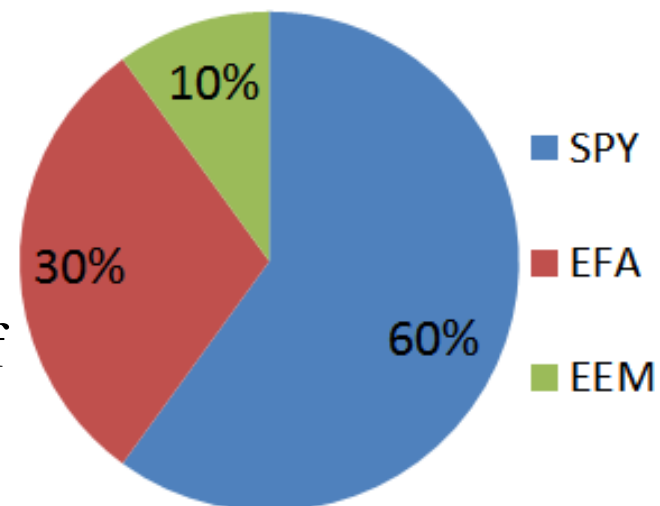


BLACKROCK



Low Volatility ETFs: Simple Applications

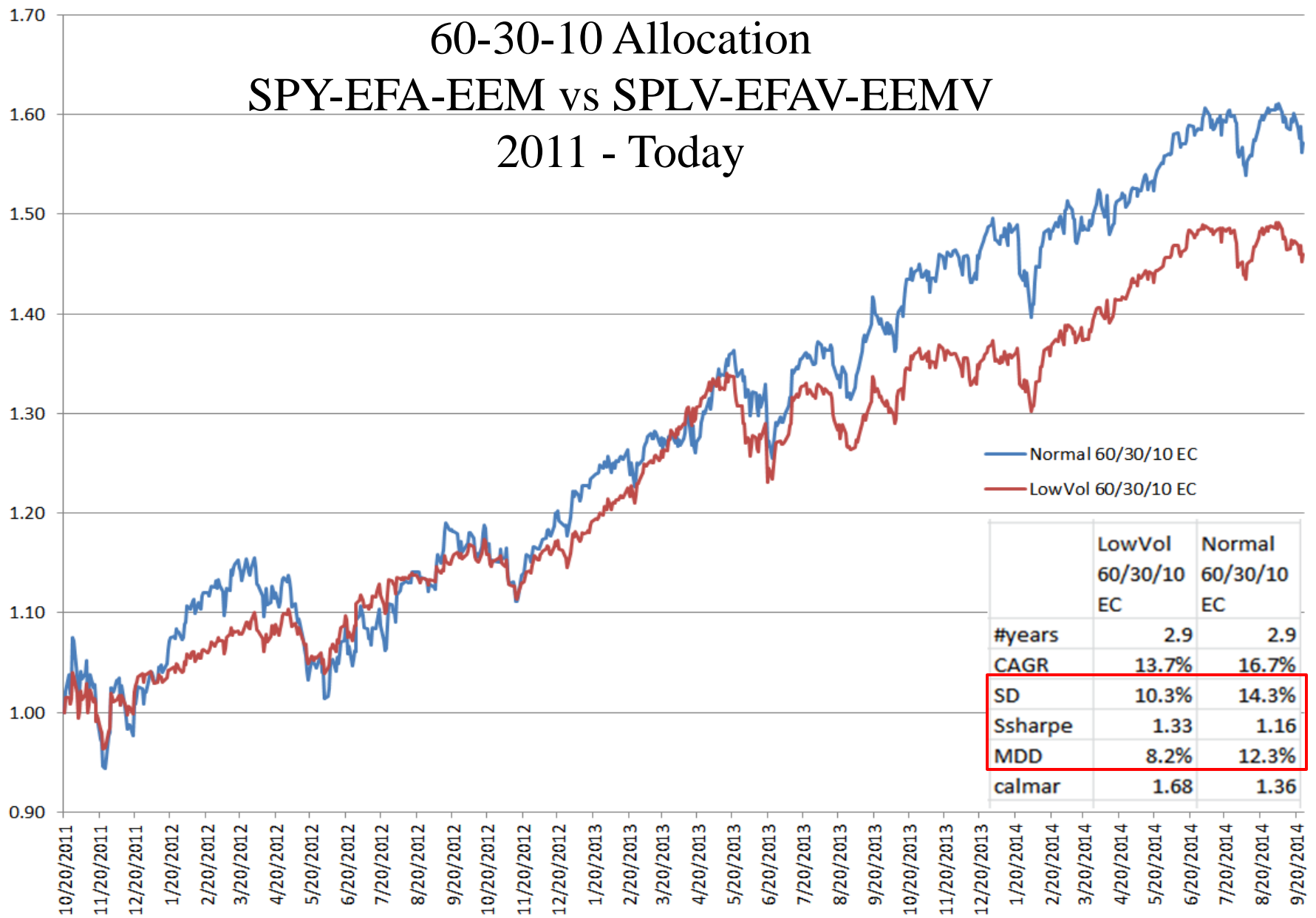
- Q: What do I do with these ETFs??
- A: Pretty much whatever you would do
- Example: Allocation the equity portion of your portfolio across Large, Mid and Small Caps
 - See example at right and next slide
 - Rebalance the 3 major segments to their target weight monthly (quarterly, yearly,
- Example: Use in place of, in addition to, the value/dividend part of your portfolio



60-30-10 Allocation

SPY-EFA-EEM vs SPLV-EFAV-EEMV

2011 - Today



Why Use Mutual Funds??

- Q: Since Low Volatility ETFs are mutual funds??
- - Not available in my 401k (or equivalent) plan
 - Too new (least not with real money)
 - I already have value oriented investments
 - Over-valued just waiting to fall off a cliff..
 -



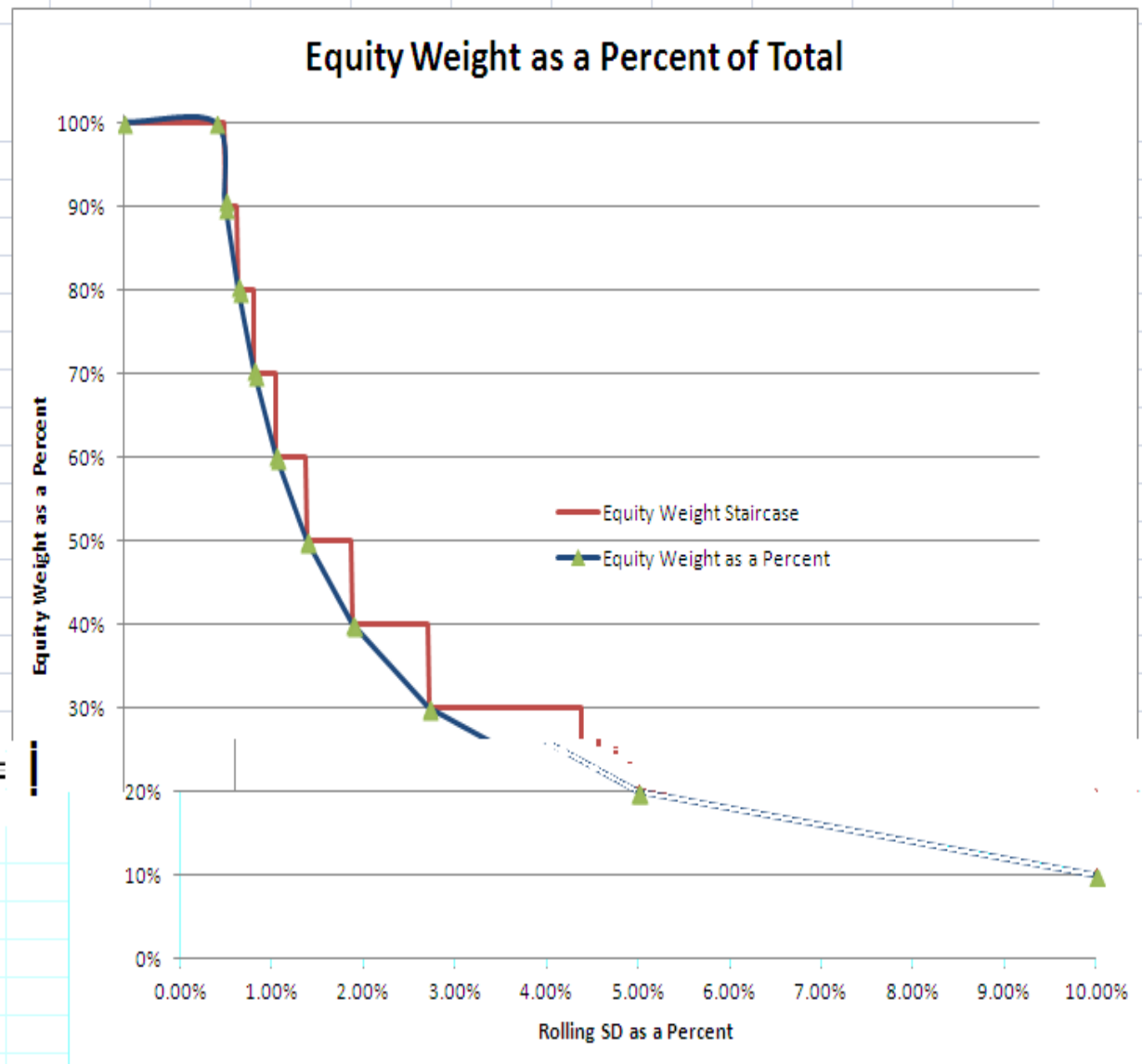
Limiting Volatility with Cash or Bonds

- To address volatility and DD measure volatility and when the market reduce volatility by adding cash or bonds
- The target volatility is a 1% daily SD on a trailing 60 day basis
 - If the SD is above 1% --- add cash to reduce volatility
- Implement the volatility check at the end of the month
- Note you *never completely exit* the market with this approach
- *Not a cure-all* fix a bad fund



Volatility Control: Continuous and Stepwise

Rolling SD as percent (top limit)	Equity Weight as a Percent	Equity Weight Staircase
0.00%	100%	100%
1.00%	100%	100%
1.10%	90.8%	100%
1.11%	90.0%	90%
1.24%	80.6%	90%
1.25%	80.0%	80%
1.42%	70.5%	80%
1.43%	70.0%	70%
1.66%	60.4%	70%
1.67%	60.0%	60%
1.99%	50.3%	60%
2.00%	50.0%	50%
2.49%	40.2%	50%
2.50%	40.0%	40%
3.32%	30.1%	40%
3.33%	30.0%	30%
4.99%	20.0%	30%
5.00%	20.0%	20%
9.99%	10.0%	20%
10.00%	10.0%	10%



SPY vs SPY Limited to 1% Volatility

— spy Vol 0.01
Mult=1

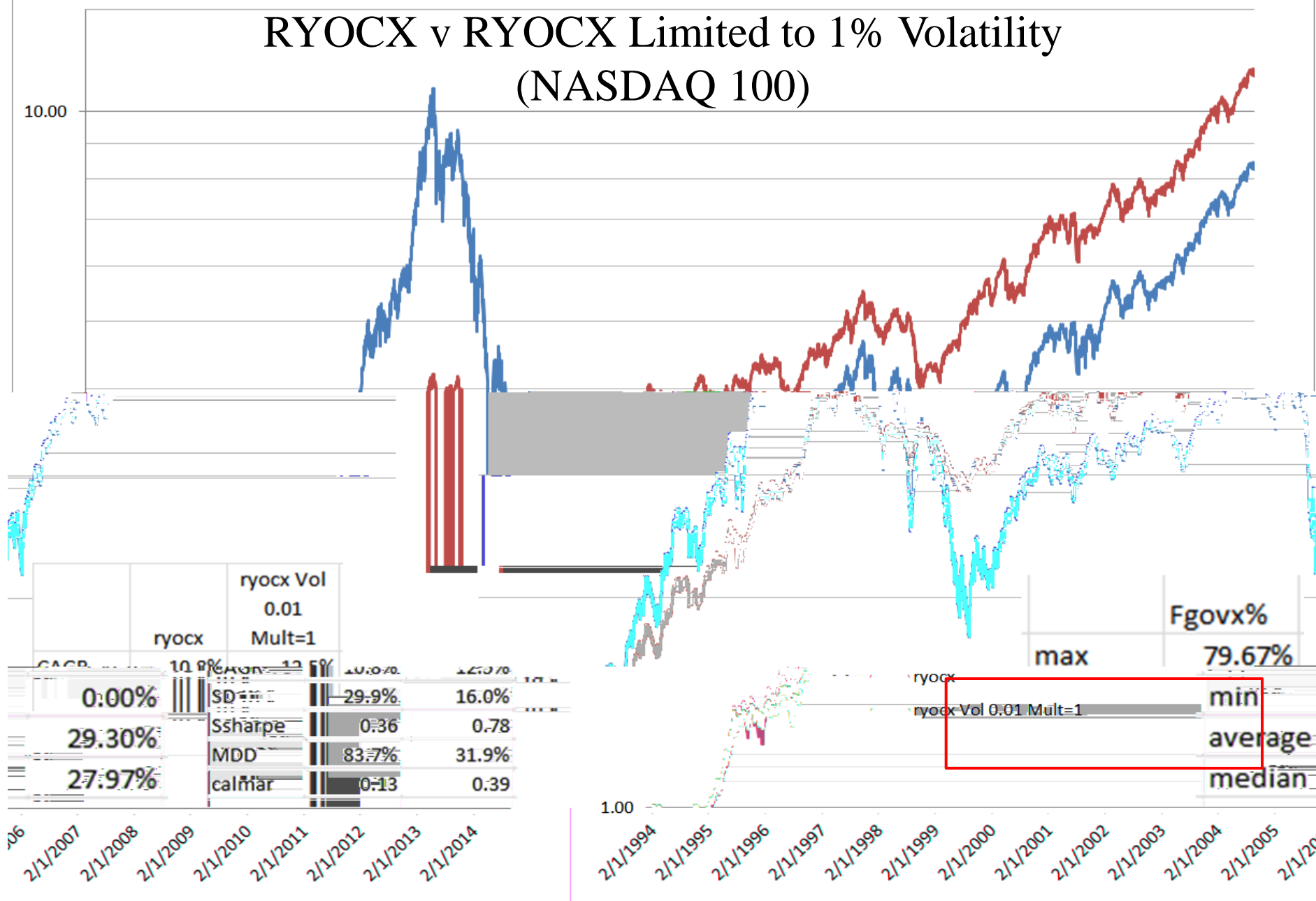
... spy

CAGR	9.1%	9.5%
SD	19.5%	14.4%
Ssharpe	0.47	0.66
MDD	55.2%	39.5%
calmar	0.16	0.24

#years	spy	spy Vol 0.01 Mult=1
CAGR	9.1%	9.5%
SD	19.5%	14.4%
Ssharpe	0.47	0.66
MDD	55.2%	39.5%
calmar	0.16	0.24

	Fgovx%
max	77.7%
min	0.0%
average	12.8%
median	0.0%

RYOCX v RYOCX Limited to 1% Volatility (NASDAQ 100)



	ryocx	ryocx Vol 0.01 Mult=1
CAGR	10.8%	10.8%
SD	29.9%	16.0%
Ssharpe	0.36	0.78
MDD	83.7%	31.9%
calmar	0.13	0.39

	Fgovx%
max	79.67%
min	
average	
median	

FRESX v FRESX Limited to 1% Volatility (Fidelity Real Estate)

10.00

fresx
fresx Vol 0.01 Mult=1

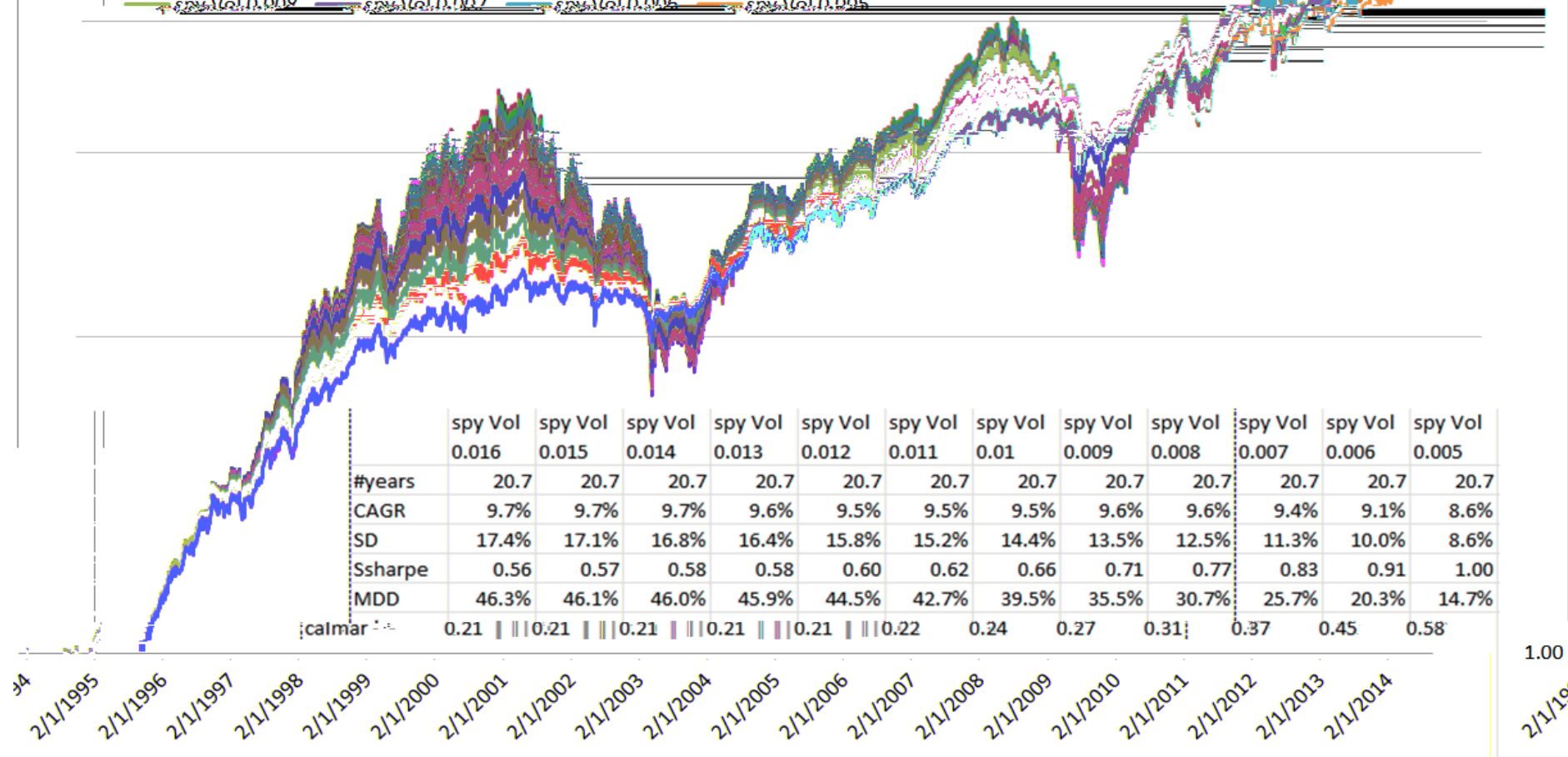
	fresx	fresx Vol 0.01 Mult=1
max	87.55%	10.4%
min	0.00%	27.0%
average	13.78%	0.39
median	0.00%	76.3%
CAGR	10.4%	12.0%
SD	27.0%	13.3%
Ssharpe	0.39	0.90
MDD	76.3%	32.0%
calmar	0.14	0.37

	fresx	fresx Vol Mult=
max	87.55%	10.4%
min	0.00%	27.0%
average	13.78%	0.39
median	0.00%	76.3%
CAGR	10.4%	12.0%
SD	27.0%	13.3%
Ssharpe	0.39	0.90
MDD	76.3%	32.0%
calmar	0.14	0.37

1999 2/1/2000 2/1/2001 2/1/2002 2/1/2003 2/1/2004 2/1/2005 2/1/2006 2/1/2007 2/1/2008 2/1/2009 2/1/2010 2/1/2011 2/1/2012 2/1/2013 2/1/2014 2/1/1994 2/1/1995 2/1/1996 2/1/1997 2/1/1998 2/1/1999

Volatility Range/Families for SPY

— spy Vol 0.016 — spy Vol 0.015 — spy Vol 0.014 — spy Vol 0.013
— spy Vol 0.012 — spy Vol 0.011 — spy Vol 0.01 — spy Vol 0.009
— spy Vol 0.008 — spy Vol 0.007 — spy Vol 0.006 — spy Vol 0.005



Timing

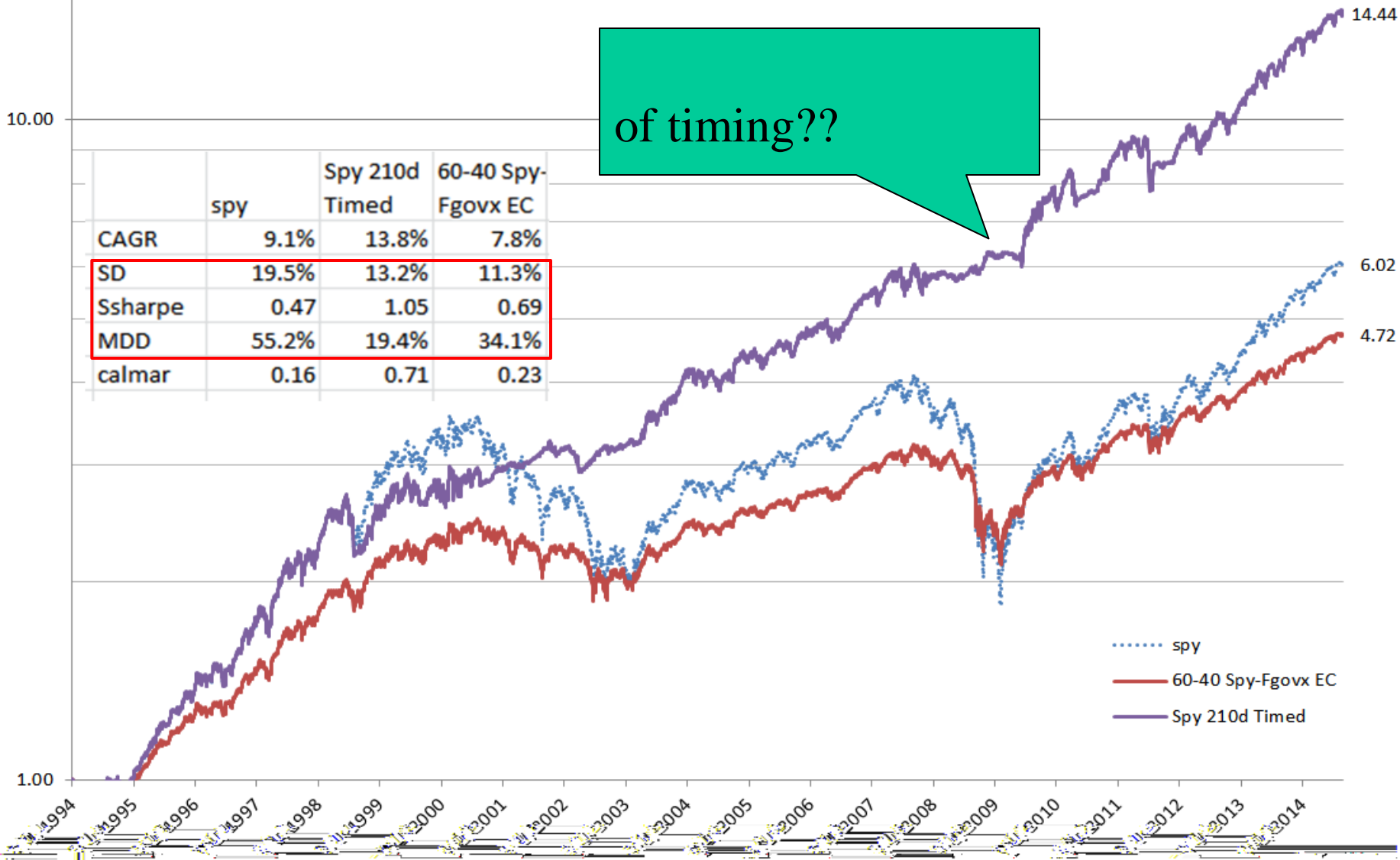
- One way to control volatility and DD
-
- Timing has worked extraordinarily well since 2000 optimistic to expect that this will continue
- For today, a simple timing system:
 - 210d or 10M SMA on the SPY
 - Implemented at end of month to reduce
- Alternative: Switch to a more conservative position when signaled to exit the market
 - Reduces your dependence on the accuracy of your timing signal



SPY timed with 210d SMA, monthly

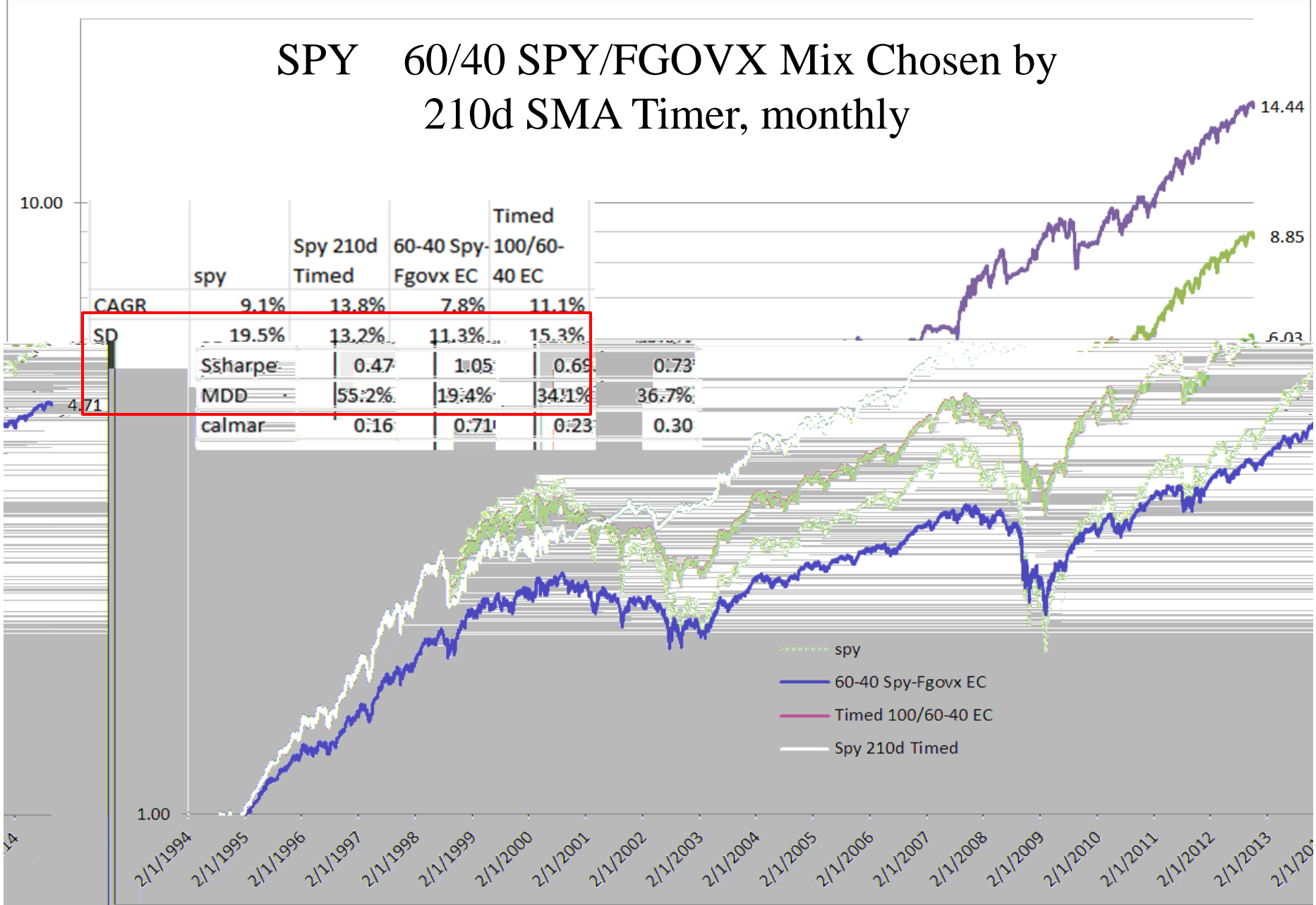
of timing??

	spy	Spy 210d Timed	60-40 Spy-Fgovx EC
CAGR	9.1%	13.8%	7.8%
SD	19.5%	13.2%	11.3%
Ssharpe	0.47	1.05	0.69
MDD	55.2%	19.4%	34.1%
calmar	0.16	0.71	0.23



..... spy
———— 60-40 Spy-Fgovx EC
———— Spy 210d Timed

SPY 60/40 SPY/FGOVX Mix Chosen by 210d SMA Timer, monthly



Low Volatility Stock Screens



The Basic Low Volatility Stock Screen and Back-Test

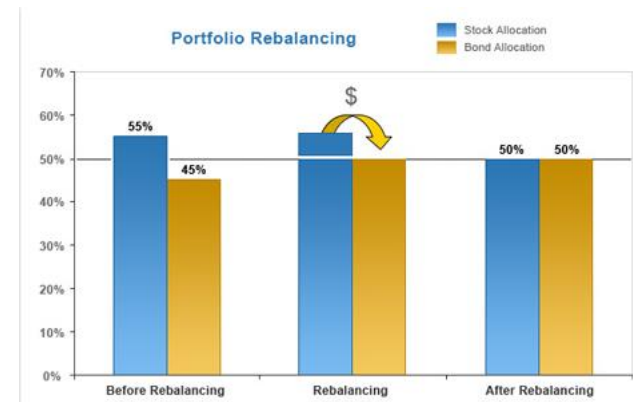
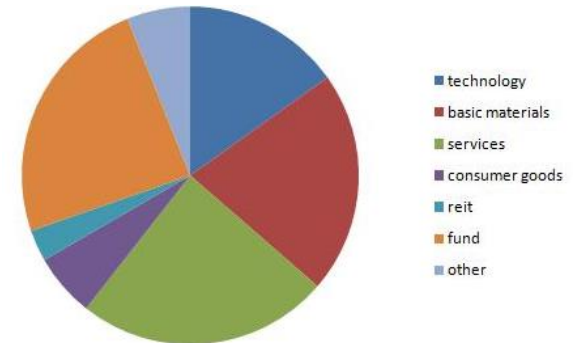
Low Volatility Index Screens

Summary of Index and Sector Screens



Basic Stock Screen & Back Test

- Implemented at Portfolio123
-
- Based on daily prices with Standard Deviation computed on the last 60 days
- Uses a 25 stock, equal weighted portfolio
- Liquidity check of \$1M per day trading
-
- Stock universe limited to index or sector under consideration
-
- Rebalanced either yearly, quarterly or monthly (4 weeks)
- Back test ran from 1/2/99 onward
- No timing, volatility control, etc. applied always in the market.



Basic Stock Screen & Back Test: Details

Volatility

← □ □ About **Main Settings** Rules Hedge Rules Backtest Rolling Backtest Clear Results Re-Run Backtest

As Of: 6/28/2014

Universe: S&P 500 Index Benchmark: S&P 500 Eq Weight

Method: Long Max No. Stocks (0 for all): 25

Ranking: No Ranking

Volatility

← □ □ About **Main Settings** **Rules** Hedge Rules Backtest Rolling Backtest Clear Results Re-Run Backtest

Show Add Wizard Rule Add Free Form Rule Clear Rules
As Of: 6/28/2014 Totals 500

500	+	and	showvar(@PctDev, PctDev(60,1))
494	+	and	showvar(@Beta, Beta)
494	+	and	setvar(@Rank, FRank("PctDev(60,1)", #All, #DESC))
48	+	and	frank("PctDev(60,1)", #All, #DESC) < 10
48	+	and	FRank("Beta", #All, #DESC) < 10

Volatility

← □ □ About **Main Settings** Rules Hedge Rules **Backtest** Rolling Backtest Clear Results Re-Run Backtest

Price: Next Open

Rank Tolerance: 0.0 Max Pos % (0-100): 0.0

Slippage %: 0.0 Carry Cost %: 0.0

Long Weight %: 100.0

Start Date - End Date: 1/2/1999 - 6/27/2014

Rebalance Frequency: 1 Year

Save Log:

1Y 5Y 10Y Max Get More Data

Stock Screen & Back Test: SP500 Stocks

Ticker	Name	MktCap	@PctDev	@Beta
WM[5d][1y]	Waste Management Inc.	20,863.87	0.69	0.91
BAX[5d][1y]	Baxter International Inc	39,505.76	0.68	0.79
BRK.B[5d][1y]	Berkshire Hathaway Inc	314,026.25	0.68	0.78
MMM[5d][1y]	3M Co	94,013.21	0.68	1.07
SE[5d][1y]	Spectra Energy Corp	28,504.11	0.68	0.82
DE[5d][1y]	Deere & Co	33,039.68	0.67	0.96
VNO[5d][1y]	Vornado Realty Trust	20,118.68	0.67	1.05
ITW[5d][1y]	Illinois Tool Works Inc.	36,534.49	0.66	1.25
WMT[5d][1y]	Wal-Mart Stores Inc	243,348.19	0.66	0.41
GGP[5d][1y]	General Growth Propertie	20,819.67	0.65	1.58
SIAL[5d][1y]	Sigma-Aldrich Corp	12,076.12	0.65	1.12
XOM[5d][1y]	Exxon Mobil Corp	434,595.75	0.65	1.06
AVB[5d][1y]	AvalonBay Communities I	18,444.72	0.64	0.69
CB[5d][1y]	Chubb Corp	22,546.50	0.63	0.78
XL[5d][1y]	XL Group Plc	8,906.92	0.63	1.47
L[5d][1y]	Loews Corp	16,946.74	0.62	0.98
SPG[5d][1y]	Simon Property Group Inc	51,898.69	0.62	0.76
BMS[5d][1y]	Bemis Co Inc	4,110.67	0.61	0.89
RSG[5d][1y]	Republic Services Inc.	13,620.04	0.61	0.7
MCD[5d][1y]	McDonald's Corp	100,283.06	0.59	0.29
TRV[5d][1y]	Travelers Companies Inc	32,637.20	0.59	0.92
ALL[5d][1y]	Allstate Corp (The)	25,471.46	0.58	1.15
ACE[5d][1y]	ACE Ltd	34,943.23	0.55	0.83
PG[5d][1y]	Procter & Gamble Co (The)	213,824.95	0.54	0.56
SWY[5d][1y]	Safeway Inc	7,896.99	0.25	1.05



JOHN DEERE

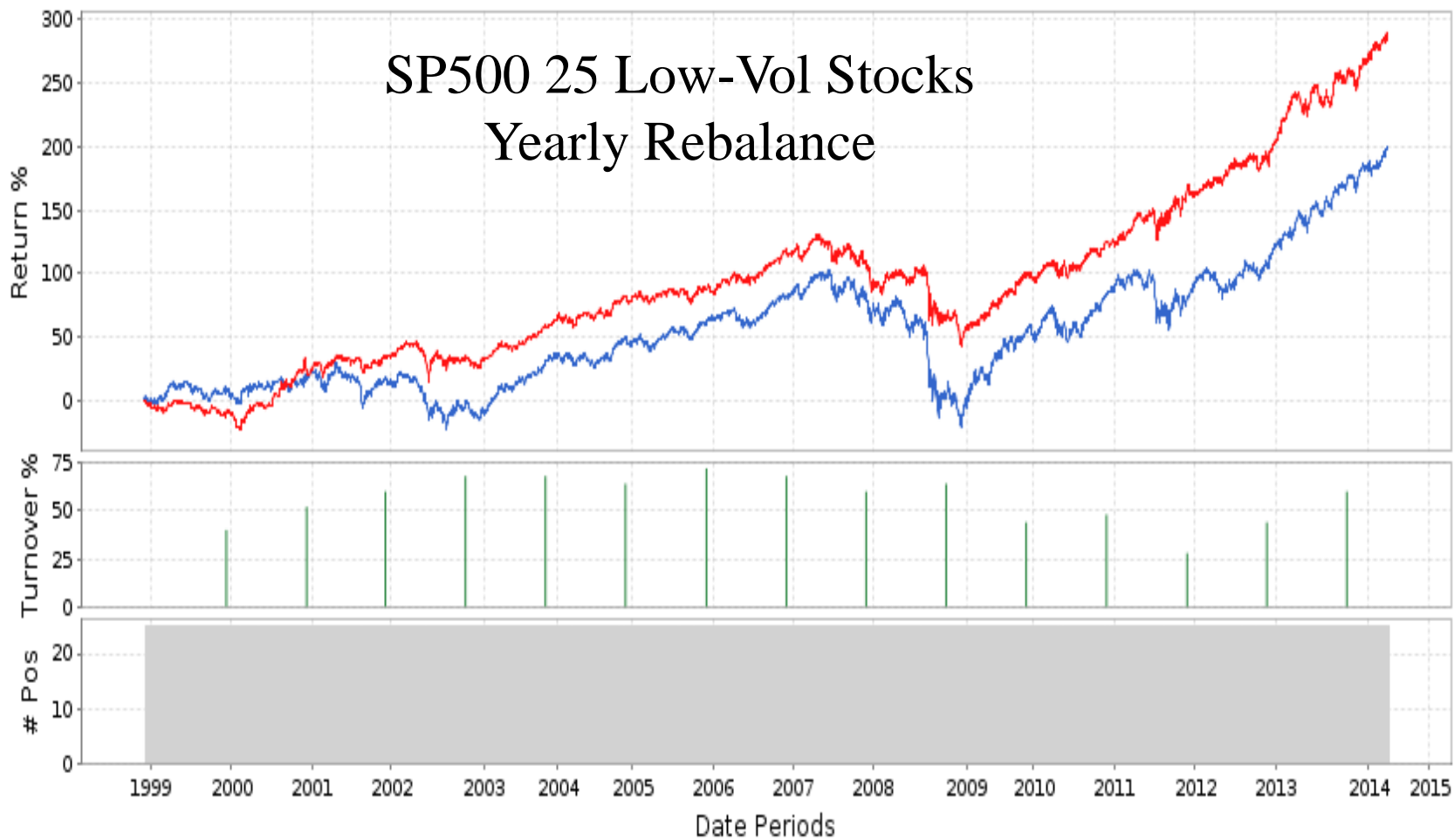


Walmart
Save money. Live better.



Allstate
You're in good hands.

SP500 25 Low-Vol Stocks Yearly Rebalance

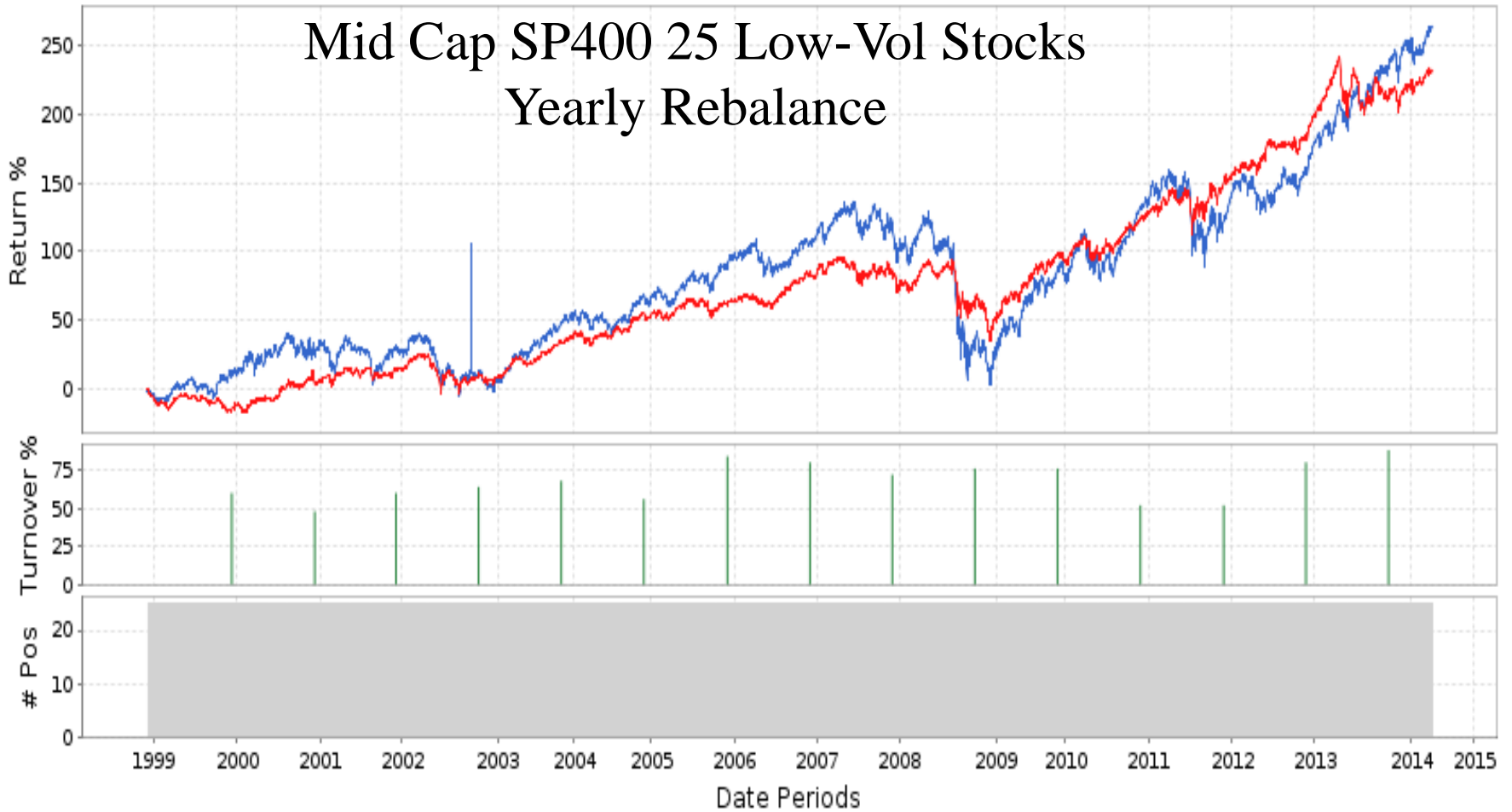


— Screen — S&P 500 Eq Weight █ Turnover % █ Number of Positions

Statistics

	Total Return	Annualized Return	Max Drawdown	Sharpe Ratio	Sortino Ratio	Standard Deviation	Correlation with	R-Squared	Beta	Alpha
Screen	287.62%	9.15%	-37.98%	0.39	0.53	13.17%	0.51	0.26	0.32	3.96%
S&P 500 Eq Weight	198.87%	7.33%	-60.83%	0.16	0.21	21.15%	-	-	-	-

Mid Cap SP400 25 Low-Vol Stocks Yearly Rebalance

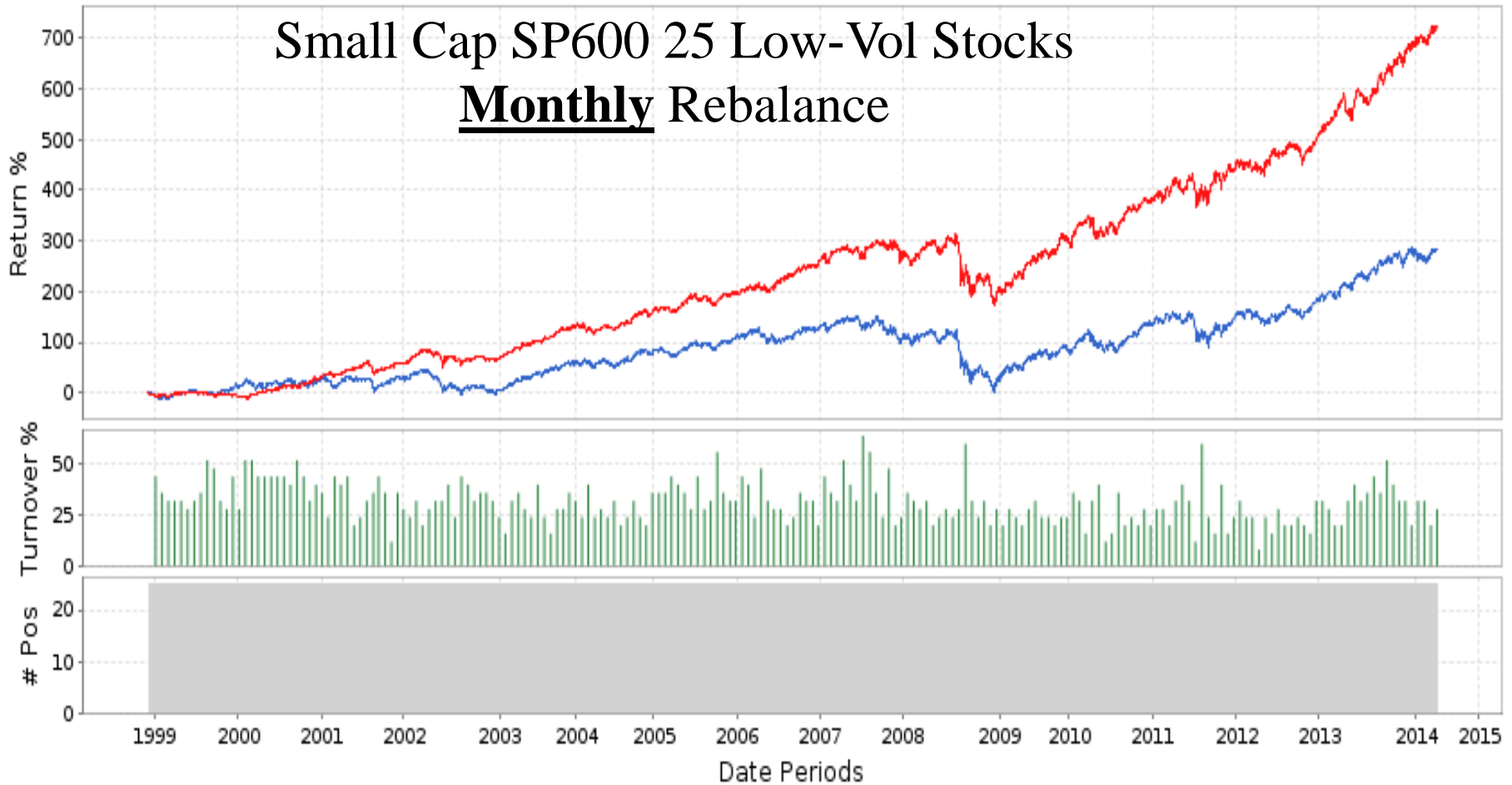


— Screen — S&P 400 Mid █ Turnover % █ Number of Positions

	Total Return	Annualized Return	Max Drawdown	Sharpe Ratio	Sortino Ratio	Standard Deviation	Correlation Benchmark	R-Squared	Beta	Alpha
Screen	231.89%	8.05%	-31.27%	0.31	0.42	13.21%	0.41	0.16	0.17	3.19%
S&P 400 Mid	263.63%	8.69%	-56.32%	0.15	0.2	32.27%	-	-	-	-

Small Cap SP600 25 Low-Vol Stocks

Monthly Rebalance

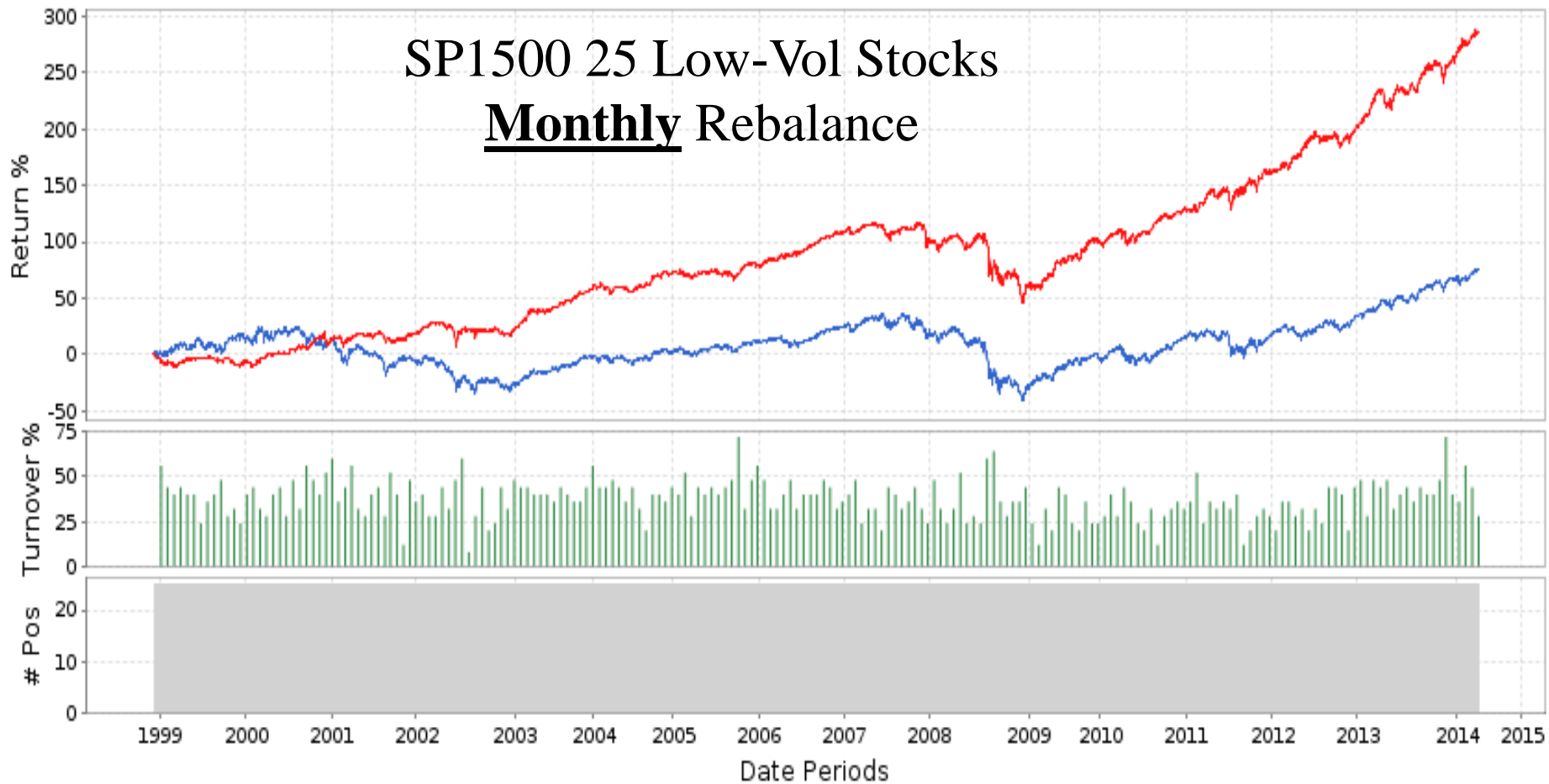


— Screen — S&P 600 Small █ Turnover % █ Number of Positions

	Total Return	Annualized Return	Max Drawdown	Sharpe Ratio	Sortino Ratio	Standard Deviation	Correlation with Benchmark	R-Squared	Beta	Alpha
Screen	723.01%	14.58%	-34.31%	0.73	0.98	14.46%	0.68	0.46	0.43	8.13%
S&P 600 Small	283.72%	9.07%	-58.80%	0.22	0.31	23.02%	-	-	-	-

SP1500 25 Low-Vol Stocks

Monthly Rebalance



— Screen — S&P 1500 Composite ■ Turnover % ■ Number of Positions

	Total Return	Annualized Return	Max Drawdown	Sharpe Ratio	Sortino Ratio	Standard Deviation	Correlation with Benchmark	R-Squared	Beta	Alpha
Screen	286.06%	9.12%	-32.69%	0.49	0.62	10.46%	0.53	0.28	0.27	5.05%
S&P 1500	74.44%	3.66%	-56.77%	-0.02	-0.02	20.10%	-	-	-	-

Summary of Index Screen Performance

Statistics											
	Total Return	Annualized Return	Max Drawdown	Sharpe Ratio	Sortino Ratio	Standard Deviation	Correlation with Benchmark	R-Squared	Beta	Alpha	
SP500 1 yr rot	287.62%	9.15%	-37.98%	0.39	0.53	13.17%	0.51	0.26	0.32	3.96%	
S&P 500 Eq Weight	198.87%	7.33%	-60.83%	0.16	0.21	21.15%	-	-	-	-	
delta	88.75%	1.82%	22.85%	0.23	0.32	-7.98%					
Screen - 1 Yr rot	231.89%	8.05%	-31.27%	0.31	0.42	13.21%	0.41	0.16	0.17	3.19%	
S&P 400 Mid	263.63%	8.69%	-56.32%	0.15	0.2	32.27%	-	-	-	-	
delta	-31.74%	-0.64%	25.05%	0.16	0.22	-19.06%					
Screen - 1 Yr rot	324.96%	9.79%	-38.04%	0.41	0.56	14.14%	0.69	0.48	0.42	3.54%	
Screen - 13 wk rot	459.44%	11.76%	-34.99%	0.54	0.72	14.43%	0.68	0.47	0.43	5.40%	
Screen - 4 wk rot	723.01%	14.58%	-34.31%	0.73	0.98	14.46%	0.68	0.46	0.43	8.13%	best of all indices most improved of all indices
S&P 600 Small	283.72%	9.07%	-58.80%	0.22	0.31	23.02%	-	-	-	-	
delta	439.29%	5.51%	24.49%	0.51	0.67	-8.56%					
Screen - 1 Yr rot	218.36%	7.76%	-26.47%	0.37	0.48	10.26%	0.54	0.29	0.27	3.74%	
Screen - 13 wk rot	238.85%	8.20%	-28.35%	0.41	0.52	10.24%	0.53	0.29	0.27	4.16%	
Screen - 4 wk rot	286.06%	9.12%	-32.69%	0.49	0.62	10.46%	0.53	0.28	0.27	5.05%	
S&P 1500 Composite	74.85%	3.67%	-56.77%	-0.01	-0.02	20.10%	-	-	-	-	
delta	211.21%	5.45%	24.08%	0.5	0.64	-9.64%					
ADR Screen- 1 Yr rot	281.58%	9.03%	-44.23%	0.36	0.46	14.07%	0.49	0.24	0.32	3.84%	least improved of all indices
All ADR - EW 1 Yr rot	256.30%	8.55%	-61.73%	0.22	0.29	21.12%	0.59	0.35	0.59	2.51%	
delta	25.28%	0.48%	17.50%	0.14	0.17	-7.05%	-0.10	-0.11	-0.27	1.33%	
QQQ - 1 Yr rot	121.42%	8.74%	-41.80%	0.31	0.41	17.36%	0.76	0.58	0.7	1.00%	
QQQ - 13 wk rot	132.78%	9.31%	-48.25%	0.34	0.43	17.68%	0.76	0.58	0.72	1.47%	
QQQ - 4 wk rot	191.15%	11.92%	-42.42%	0.49	0.64	17.30%	0.76	0.57	0.7	4.12%	starts 2005
Nasdaq 100	137.15%	9.53%	-53.13%	0.33	0.42	18.75%	-	-	-	-	
delta	54.00%	2.39%	10.71%	0.16	0.22	-1.45%					
All Dow 4 wk rot	164.66%	6.49%	-60.53%	0.13	0.17	19.73%	0.68	0.46	0.71	2.41%	
Dia 4 wk rot	220.64%	7.81%	-34.53%	0.26	0.35	14.79%	0.64	0.41	0.5	3.70%	top 10 of 30 worst of all indices
Dow Jones	83.49%	4.00%	-53.78%	0	0	18.86%	-	-	-	-	
delta	137.15%	3.81%	19.25%	0.26	0.35	-4.07%					

Summary of Sector Screen Performance

Statistics										
	Total Return	Annualized Return	Max Drawdown	Sharpe Ratio	Sortino Ratio	Standard Deviation	Correlation with Benchmark	R-Squared	Beta	Alpha
Energy - 52wk rot	900.81%	16.04%	-70.31%	0.45	0.58	26.64%	0.53	0.28	0.67	9.46%
All energy - 52 wk rot	1051.58%	17.09%	-71.28%	0.43	0.58	30.57%	0.53	0.28	0.76	10.17%
delta	-150.77%	-1.05%	0.97%	0.02	0	-3.93%	0	0	-0.09	-0.71%
Materials - 52wk rot	361.52%	10.38%	-55.93%	0.33	0.44	19.56%	0.63	0.39	0.58	4.30%
All Matetials - 52 wk rot	470.79%	11.91%	-65.09%	0.33	0.44	23.84%	0.65	0.42	0.73	5.29%
delta	-109.27%	-1.53%	9.16%	0	0	-4.28%	-0.02	-0.03	-0.15	-0.99%
Ind - 13 wk rot	422.31%	11.27%	-47.31%	0.45	0.61	16.16%	0.61	0.37	0.46	5.54%
All Ind - 13 wk rot	450.59%	11.65%	-59.10%	0.34	0.46	22.30%	0.66	0.44	0.7	5.14%
delta	-28.28%	-0.38%	11.79%	0.11	0.15	-6.14%	-0.05	-0.07	-0.24	0.40%
CnsmrDisc 4 wk rot	355.31%	10.28%	-49.12%	0.39	0.51	16.27%	0.58	0.34	0.45	4.65%
AllCnsmrDisc - 4wk rot	325.57%	9.80%	-68.96%	0.24	0.32	24.19%	0.63	0.4	0.72	3.30%
delta	29.74%	0.48%	19.84%	0.15	0.19	-7.92%	-0.05	-0.06	-0.27	1.35%
CnsmrStpls 4 wk rot	376.25%	10.60%	-31.84%	0.54	0.7	12.38%	0.46	0.21	0.27	5.53%
AllCnsmrStpls - 4wk rot	456.86%	11.73%	-34.44%	0.53	0.71	14.72%	0.57	0.33	0.4	6.20%
delta	-80.61%	-1.13%	2.60%	0.01	-0.01	-2.34%	-0.11	-0.12	-0.13	-0.67%
Healthcare - 52wk rot	521.95%	12.53%	-37.11%	0.58	0.77	14.78%	0.49	0.24	0.34	7.14%
All Healthcare - 52 wk rot	628.34%	13.68%	-39.96%	0.55	0.74	17.81%	0.55	0.3	0.46	7.86%
delta	-106.39%	-1.15%	2.85%	0.03	0.03	-3.03%	-0.06	-0.06	-0.12	-0.72%
Financials - 52wk rot	178.61%	6.84%	-51.07%	0.16	0.22	18.03%	0.58	0.34	0.5	1.17%
All Financials - 52 wk rot	192.29%	7.17%	-71.70%	0.12	0.17	25.80%	0.63	0.39	0.77	0.61%
delta	-13.68%	-0.33%	20.63%	0.04	0.05	-7.77%	-0.05	-0.05	-0.27	0.56%
IT 4 wk rot	449.98%	11.64%	-49.01%	0.42	0.58	18.24%	0.56	0.32	0.48	5.83%
All IT - 4wk rot	282.90%	9.06%	-73.82%	0.18	0.27	27.92%	0.56	0.32	0.74	2.51%
delta	167.08%	2.58%	24.81%	0.24	0.31	-9.68%	0	0	-0.26	3.32%
Utilities - 52wk rot	319.65%	9.70%	-35.23%	0.4	0.53	14.37%	0.47	0.22	0.32	4.50%
All Utilities - 52 wk rot	339.61%	10.03%	-39.88%	0.38	0.5	16.17%	0.51	0.26	0.39	4.59%
delta	-19.96%	-0.33%	4.65%	0.02	0.03	-1.80%	-0.04	-0.04	-0.07	-0.09%

Doing the Trades: Problems and Solutions

- A major objection to screening is the amount, and costs, of trading
 - One 25-stock screen rotated annually results in 50 trades/year
 - Assume 1 timing-event per year
 - Monthly volatility adjustments can add another 100-200 trades/year
 - High costs in terms of time and \$\$\$
- Ways to address this problem
 - Find a cheaper brokerage, negotiate fees with broker
 - Wrap accounts
 - Brokerages aimed at this market segment (*next slide...*)



Doing the Trades:



Find investing ideas

We build portfolios

You tailor the portfolio

Control What You Buy

Customize any motif, or build your own from scratch. Easily add stocks, delete stocks, or change their weightings.

Home Improvement Stores ?		53.4%
	Home Depot Inc.	27.6%
	Lowe's Cos.	23.7%
	Lumber Liquidators Holdings Inc.	2.1%

NAME	INDEX
Biotech Breakthroughs Created By: Motif Investing	2321 (↑ 1.63%)
Cleantech Everywhere Created By: Motif Investing	2268 (↑ 0.28%)
Chinese Solar Created By: Motif Investing	1682 (↓ 0.68%)
Dividend Stars Created By: Motif Investing	1174 (↑ 0.96%)
3D Printing Created By: Motif Investing	1246 (↑ 1.06%)



Buy for just \$9.95

No matter how much you customize, buy up to 30 stocks or ETFs in one motif for a total \$9.95 commission.

Investing Made Social

What do you think about this motif?

BULL CASE (46%) Large oil spills, such as the one caused by the Deepwater Horizon explosion in 2010, can lead to deflation in new exploration or extraction of oil.	BEAR CASE (38%) The moratorium on drilling in the Outer Continental shelf is due to expire at the end of 2012. This would...
---	--



CI-LowVolSP500

Created by: Allan Zmyslowski Last Updated: 10/03/2014 Initial Purchase: 10/03/2014

MOTIF INDEX ? 1064 (0.0%)	TODAY'S CHANGE \$0.00 (0.0%)	CURRENT VALUE \$262.57	RETURN TO DATE ? ↑ 5.5%
-------------------------------------	--	----------------------------------	-----------------------------------

MOTIF ACTIONS

Trade Motif

Rebalance Motif



OVERVIEW

PERFORMANCE

WHAT OTHERS THINK

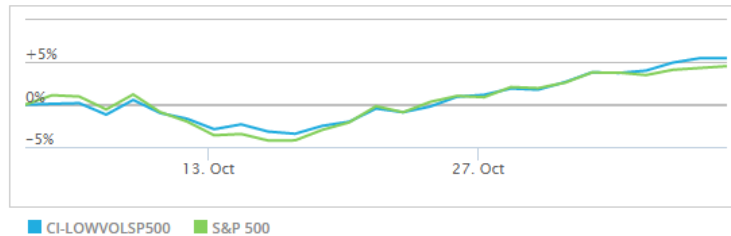
TRANSACTION HISTORY

ORDER HISTORY

Description

YOU HAVE NOT YET ADDED A DESCRIPTION
[ADD DESCRIPTION](#)

PERFORMANCE TO DATE -- VIEW LARGE



View: My Overview Table

WEIGHT	SEGMENT & STOCKS	SHARES OWNED	PRICE	CURRENT VALUE	GAIN / LOSS	ACTION
27.9%	Financial					
4.2%	Chubb Corp.	0.11	\$100.60 (0.00%)	\$11.07	\$0.85 (↑ 8.3%)	Trade
4.1%	Cincinnati Financial Corp.	0.21	\$51.18 (0.00%)	\$10.75	\$0.82 (↑ 8.2%)	Trade
4.0%	Marsh & McLennan Cos.	0.19	\$55.87 (0.00%)	\$10.62	\$0.68 (↑ 6.8%)	Trade
4.0%	Allstate Corp.	0.16	\$66.13 (0.00%)	\$10.58	\$0.66 (↑ 6.7%)	Trade
4.0%	Loews Corp.	0.24	\$43.43 (0.00%)	\$10.42	\$0.40 (↑ 4.0%)	Trade
3.8%	ACE Ltd.					
3.8%	Bank Corp.	0.08	\$124.43 (0.00%)	\$9.95	\$0.09 (↑ 1.0%)	Trade
16.1%	Services					
4.2%	Costco Wholesale Corp.					
4.0%	Fiserv Inc.					
3.6%	McDonalds Corp.					
16.1%	Healthcare					
4.4%	Becton Dickinson & Co.					
4.0%	CVS Health Corp	0.12	\$88.43 (0.00%)	\$10.61	\$0.91 (↑ 9.4%)	Trade

Session Take-Aways



Session Take-Aways

Described the structure, weightings holdings of Low Volatility ETFs along with their possible pitfalls

Discussed how mutual fund (and other holdings) volatility can be limited by adding cash/bonds

Showed how a volatility-reward point can be chosen from a family of volatility limit curves

Provided an example of a timing system along with some cautions about timing



Session Take-Aways

Discussed the back-tests and the performance of some simple low volatility screens

Reviewed some of the items needed to implement these strategies

-
like stock screen at motif investing

apply it to your portfolio even if in a small way (to start)

Thanks much!!

al_zmyslowski@yahoo.com



Shameless Plug for the CIMI Group

<http://groups.yahoo.com/neo/groups/AAII-SV-CI-MI-Group/info>

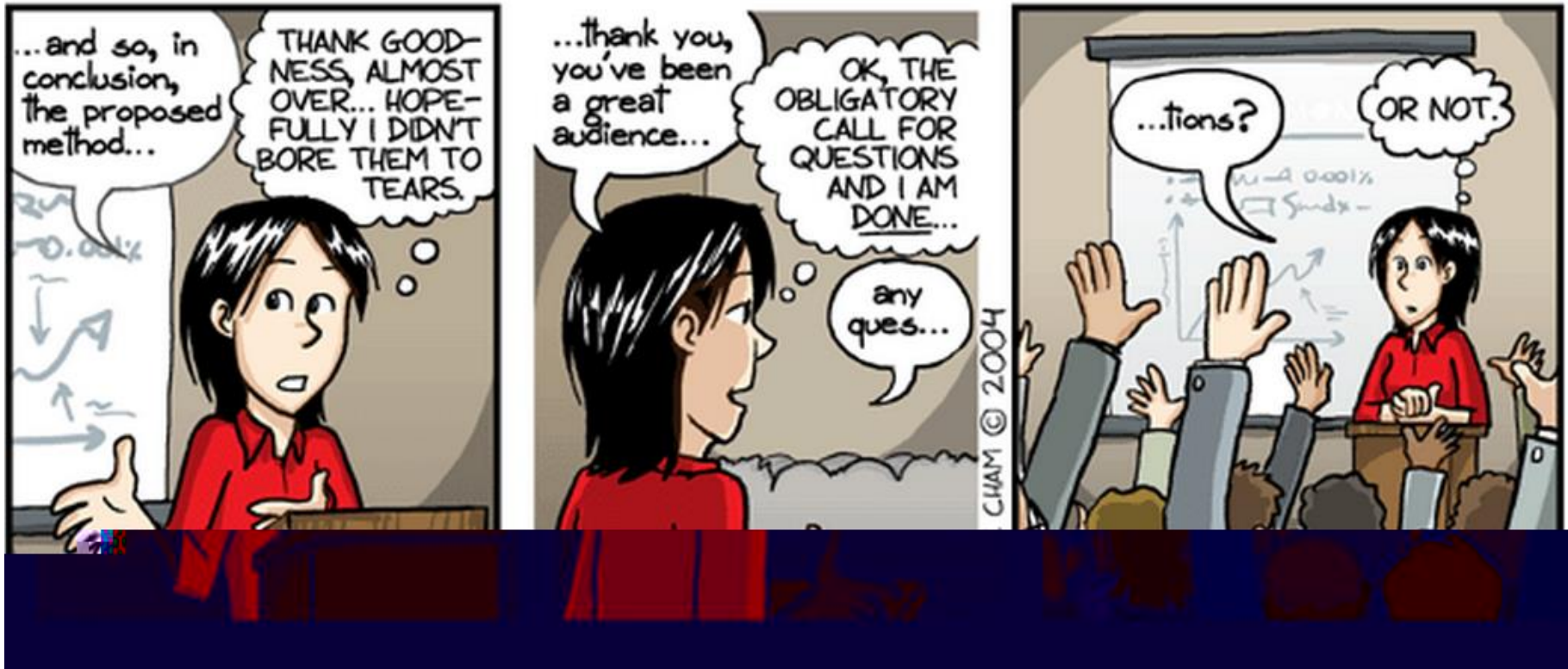
CIMI Meeting Schedule

December Meeting: Tuesday December 2nd

***Campbell Library*, 6:30-8:30**

January Meeting: Tuesday January 6th

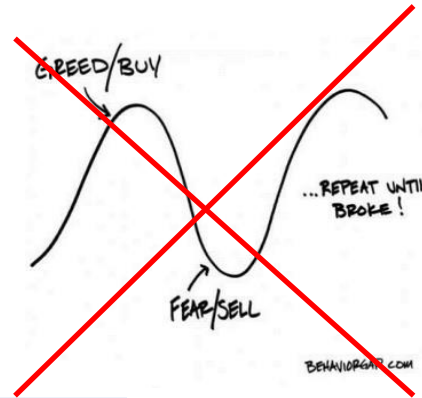
Saratoga Library, 6:30-8:30



Additional Slides

(not shown during presentation)

Aside: Volatility and Drawdown

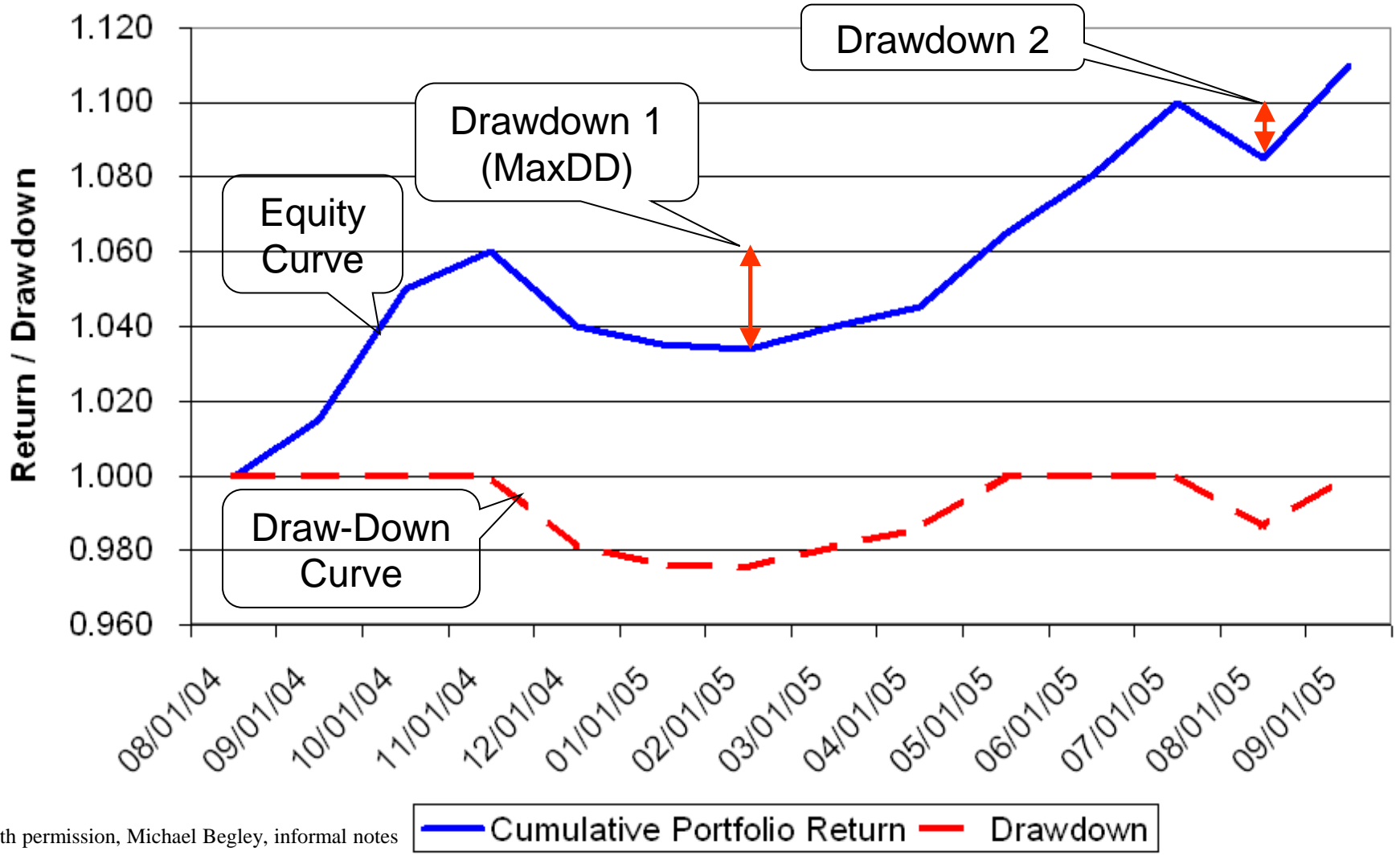


Volatility and Drawdown

- We all like the gains from the market but we hate losing money much more!
 - Behavioral finance has a lot to say about this part of investing
- While standard deviation is one measure of volatility, drawdown is what drives people to sell
 - A quick review of DrawDown (DD) and Max DD (MDD) follows
- There are other measures of risk but DD, MDD and SD are good general indicators
 - Other risk measures include VaR, CVaR, Ulcer Index, etc.



Portfolio Return and Drawdowns

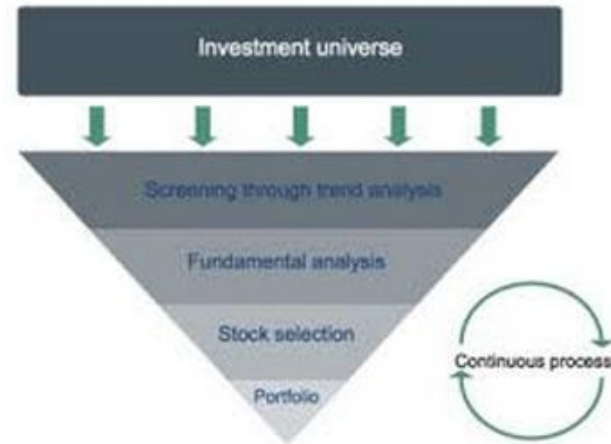


with permission, Michael Begley, informal notes

Implementation Details



- Spreadsheets
- Stock Trading: Problems and Solutions
- Doing the Trades



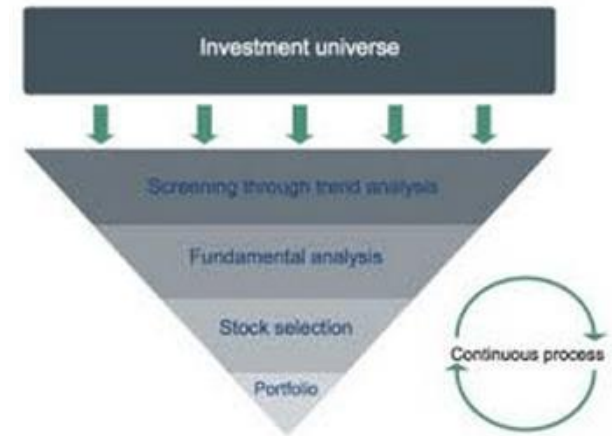
Spreadsheet for Timing and Volatility Control

- Spreadsheet to do both timing and volatility control examples shown today will be posted free!
- The spreadsheet is simple:
 - Functions: If(), Month(), Average(), Sum(), Max(), Stdev()
 - Comes pre-loaded with data
 - Review the spreadsheet and give it a try happy to do email Q&A
- Go to <http://investexcel.net> for a free spreadsheet that downloads Yahoo! data

	A	O	P	Q	R	S	T	U	V	W	X	Y	Z
1				vol Tgt	1.0%		cash Mult	1					
2													
3			naesx delta	63d SD	cash needed		naesx	cash	Naesx Vol 0.01 Mult=1	delta	rolling SD	Max	DD
4	2/1/1994						1.00	0	1.00				1.00
5	2/2/1994		0.64%		0%		1.01	0	1.01	0.64%			1.01 0.0%
6	2/3/1994		0.00%		0%		1.01	0	1.01	0.00%	0.45%		1.01 0.0%
7	2/4/1994		-2.03%		0%		0.99	0	0.99	-2.03%	1.39%		1.01 2.0%
5188	9/4/2014		-0.41%	0.64%	0%		7.68	0.00	7.68	-0.41%	0.95%		7.81 1.6%
5189	9/5/2014		0.32%	0.64%	0%		7.71	0.00	7.71	0.32%	0.95%		7.81 1.3%
5190	9/8/2014		0.00%	0.63%	0%		7.71	0.00	7.71	0.00%	0.95%		7.81 1.3%
5191	9/9/2014		-0.97%	0.65%	0%		7.63	0.00	7.63	-0.97%	0.95%		7.81 2.2%
5192	9/10/2014		0.34%	0.65%	0%		7.66	0.00	7.66	0.34%	0.95%		7.81 1.9%
5193	9/11/2014		0.56%	0.64%	0%		7.70	0.00	7.70	0.56%	0.95%		7.81 1.4%
5194	9/12/2014		-0.91%	0.65%	0%		7.63	0.00	7.63	-0.91%	0.95%		7.81 2.3%
5195	9/15/2014		-0.87%	0.66%	0%		7.57	0.00	7.57	-0.87%	0.95%		7.81 3.1%
5196	9/16/2014		0.53%	0.66%	0%		7.61	0.00	7.61	0.53%	0.95%		7.81 2.6%
5197	9/17/2014		0.16%	0.66%	0%		7.62	0.00	7.62	0.16%	0.95%		7.81 2.4%
5198	9/18/2014		0.31%	0.66%	0%		7.64	0.00	7.64	0.31%	0.95%		7.81 2.1%
5199	9/19/2014		-0.74%	0.66%	0%		7.59	0.00	7.59	-0.74%	0.95%		7.81 2.9%
5200	9/22/2014		-1.47%	0.69%	0%		7.47	0.00	7.47	-1.47%	0.95%		7.81 4.3%
5201	9/23/2014		-0.89%	0.69%	0%		7.41	0.00	7.41	-0.89%	0.95%		7.81 5.1%
5202	9/24/2014		0.63%	0.69%	0%		7.45	0.00	7.45	0.63%	0.95%		7.81 4.5%
5203	9/25/2014		-1.43%	0.71%	0%		7.35	0.00	7.35	-1.43%	0.95%		7.81 5.9%
5204	9/26/2014		0.73%	0.71%	0%		7.40	0.00	7.40	0.73%	0.95%		7.81 5.2%
5205													
5206		All SD	1.37%	0.71%				#years	20.7				
5207		Yrly SD	21.8%	11.3%				CAGR	10.2%				
5208			max	4.83%	78.61%			SD	15.0%				
5209			min	0.32%	0.00%			Ssharpe	0.68				
5210			average	1.21%	15.79%			MDD	33.4%				
5211			median	1.06%	3.71%			calmar	0.30				

Implementation Details

- - This is needed for the 1% volatility limit schemes
 - Stock back-tests assumes an equal percentage of \$\$\$ taken from each stock i.e., sell some of each stock which increases the trade count
- Screens can be implemented at P123 and similar tools -- and possibly some free screeners
 - Use beta or volatility (if available)
- Hesitant?? Start off small.
 - Commissions insignificant as you scale up

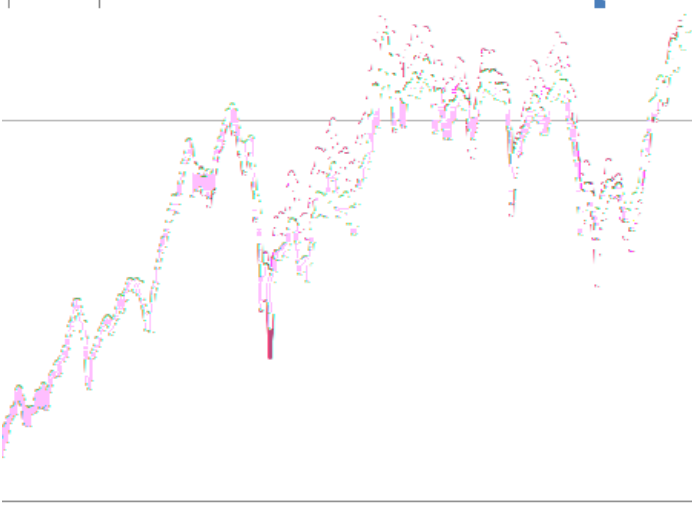
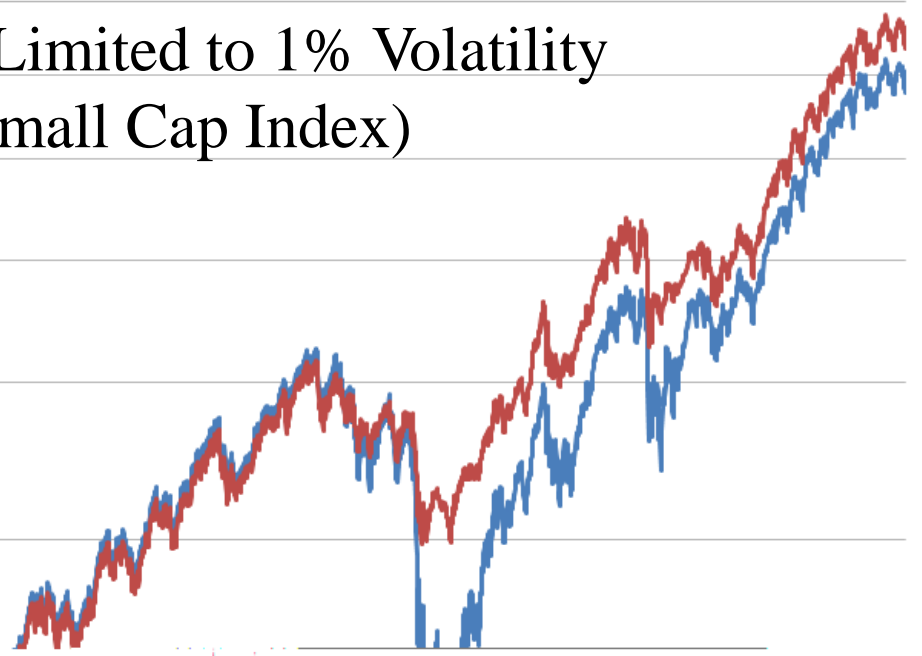


Additional 1% & 210d SMA Volatility Control Examples



NAESX v NAESX Limited to 1% Volatility (Vanguard Small Cap Index)

naesx
Naesx Vol 0.01
Mult=1

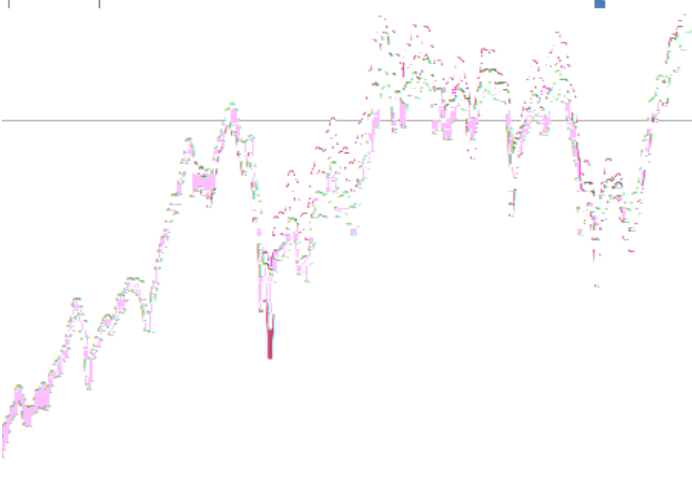
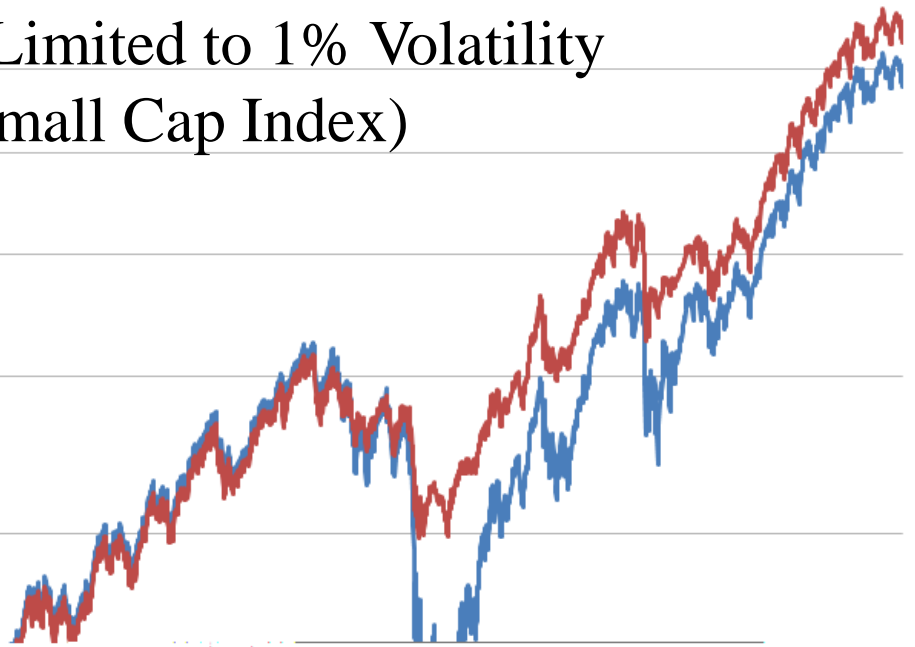


	Fgovx %		naesx	Naesx Vol 0.01 Mult=1
max	78.6%	CAGR	9.7%	10.2%
min	0.0%	SD	21.8%	15.0%
average	15.8%	Ssharpe	0.45	0.68
median	3.7%	MDD	59.8%	33.4%
		calmar	0.16	0.30

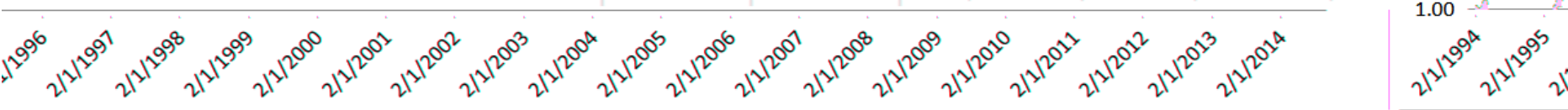
4/1996 2/1/1997 2/1/1998 2/1/1999 2/1/2000 2/1/2001 2/1/2002 2/1/2003 2/1/2004 2/1/2005 2/1/2006 2/1/2007 2/1/2008 2/1/2009 2/1/2010 2/1/2011 2/1/2012 2/1/2013 2/1/2014 1.00 2/1/1994 2/1/1995 2/1/1996

NAESX v NAESX Limited to 1% Volatility (Vanguard Small Cap Index)

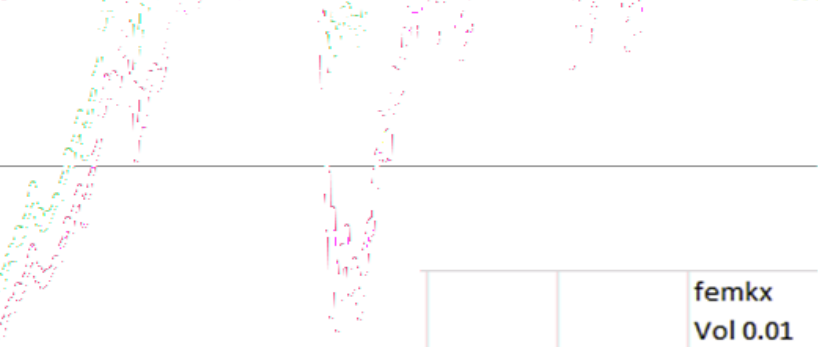
naesx
Naesx Vol 0.01
Mult=1



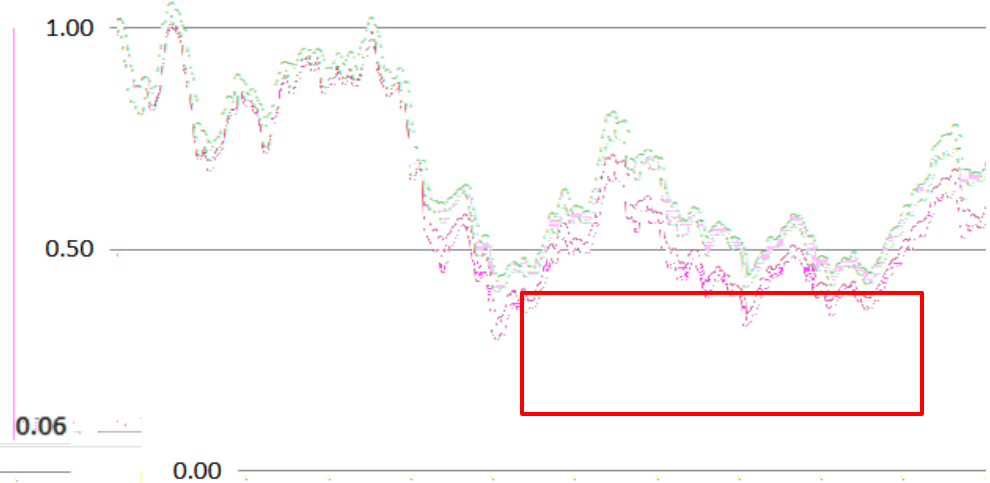
	Fgovx %	naesx	Naesx Vol 0.01 Mult=1
max	78.6%	CAGR 9.7%	10.2%
min	0.0%	SD 21.8%	15.0%
average	15.8%	Ssharpe 0.45	0.68
median	3.7%	MDD 59.8%	33.4%
		calmar 0.16	0.30



FEMKX v FEMKX Limited to 1% Volatility (Fidelity Emerging Markets)



	FGOVX %		femkx	femkx Vol 0.01 Mult=1
max	81.97%	CAGR	2.4%	3.8%
min	0.00%	SD	21.8%	15.7%
average	15.38%	Ssharpe	0.11	0.24
median	2.26%	MDD	71.1%	61.3%
		calmar		0.03

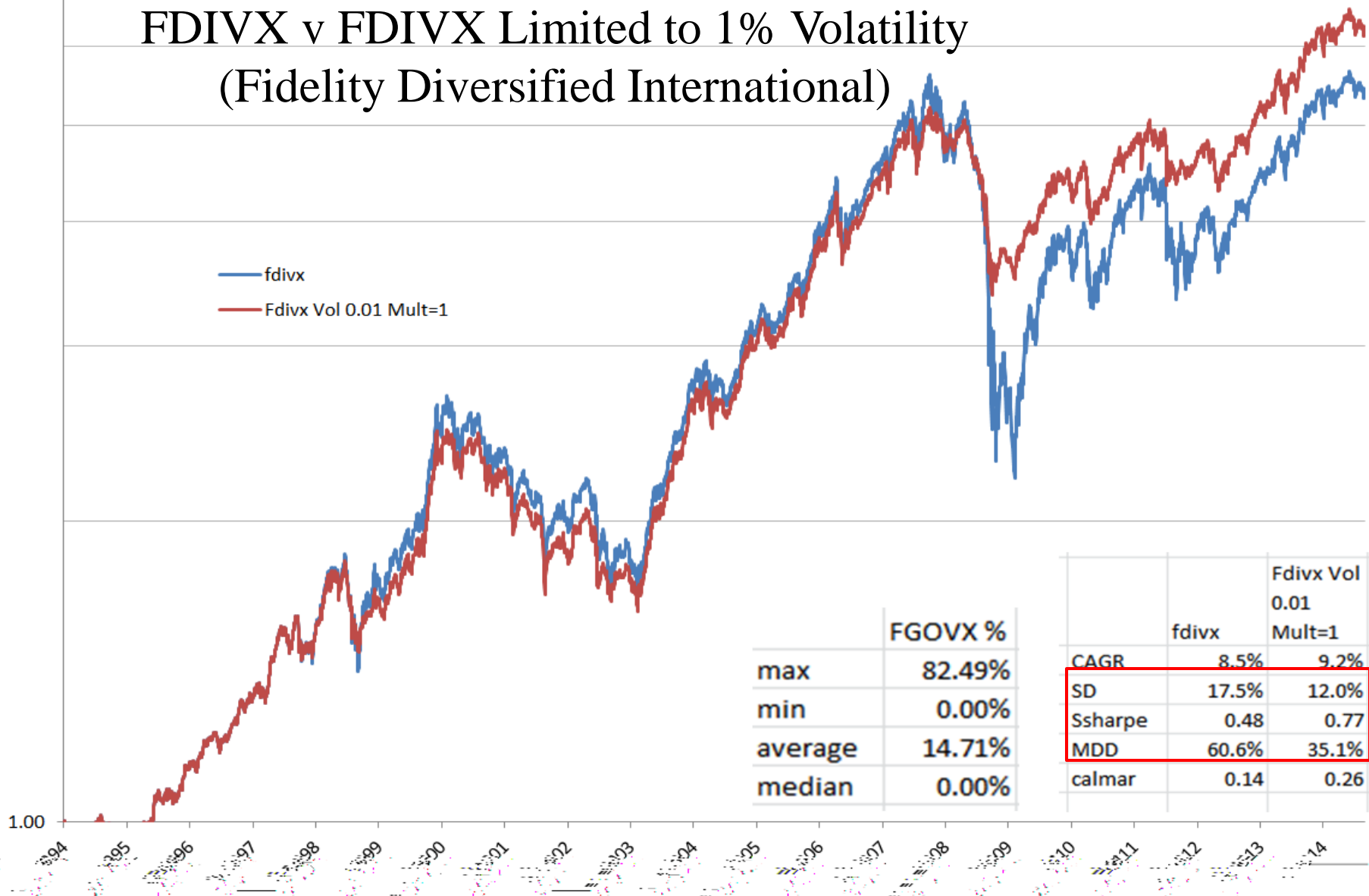


2/1/2004 2/1/2005 2/1/2006 2/1/2007 2/1/2008 2/1/2009 2/1/2010 2/1/2011 2/1/2012 2/1/2013 2/1/2014

2/1/1994 2/1/1995 2/1/1996 2/1/1997 2/1/1998 2/1/1999 2/1/2000 2/1/2001 2/1/2002 2/1/2003

FDIVX v FDIVX Limited to 1% Volatility (Fidelity Diversified International)

— fdivx
— Fdivx Vol 0.01 Mult=1

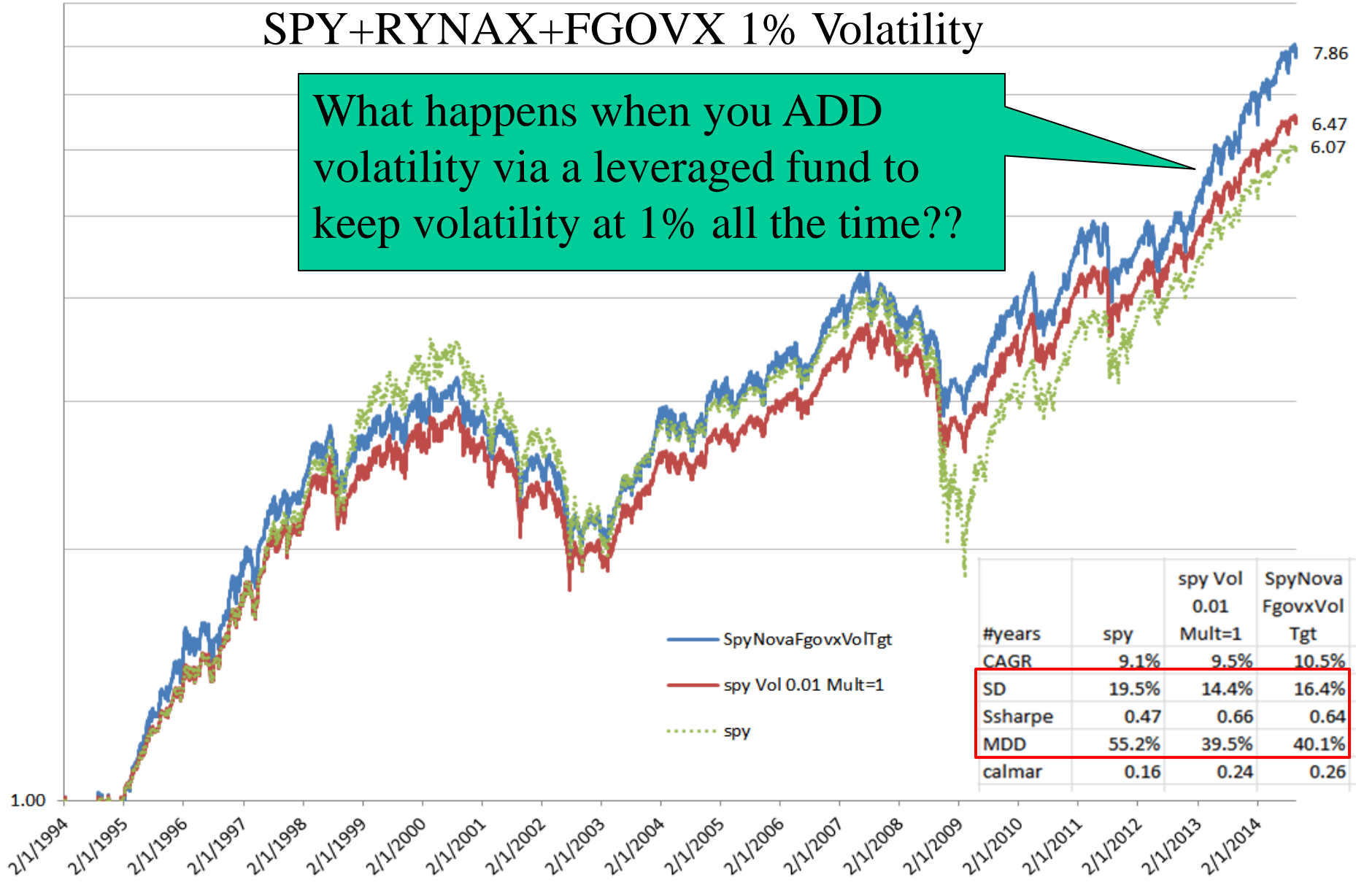


	FGOVX %
max	82.49%
min	0.00%
average	14.71%
median	0.00%

	fdivx	Fdivx Vol 0.01 Mult=1
CAGR	8.5%	9.2%
SD	17.5%	12.0%
Ssharpe	0.48	0.77
MDD	60.6%	35.1%
calmar	0.14	0.26

SPY+RYNAX+FGOVX 1% Volatility

What happens when you ADD volatility via a leveraged fund to keep volatility at 1% all the time??



Spy @ 0.7% Volatility v Wellington

- spy Vol 0.01 Mult=1
- spy
- vwelx
- spy Vol 0.007

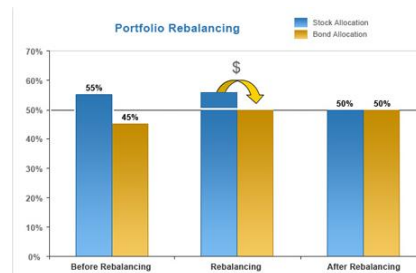
An example of picking your risk/reward curve

	spy	spy Vol 0.007
CAGR	9.1%	9.4%
SD	19.5%	11.3%
Ssharpe	0.47	0.83
MDD	55.2%	25.7%
calmar	0.16	0.37

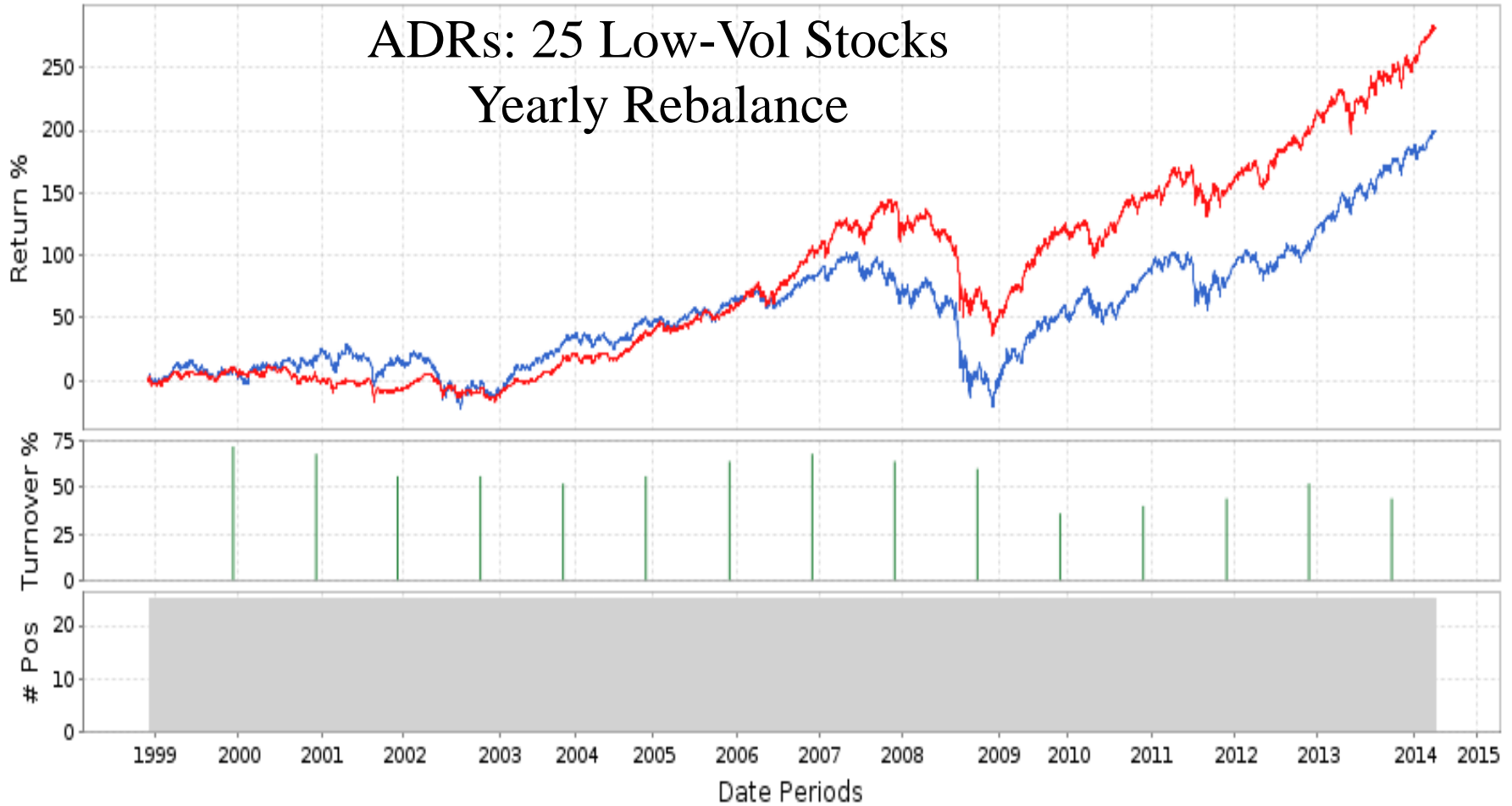
vwelx
9.4%
11.4%
0.83
36.1%
0.26



Additional Low Volatility Stock Screen Examples



ADRs: 25 Low-Vol Stocks Yearly Rebalance

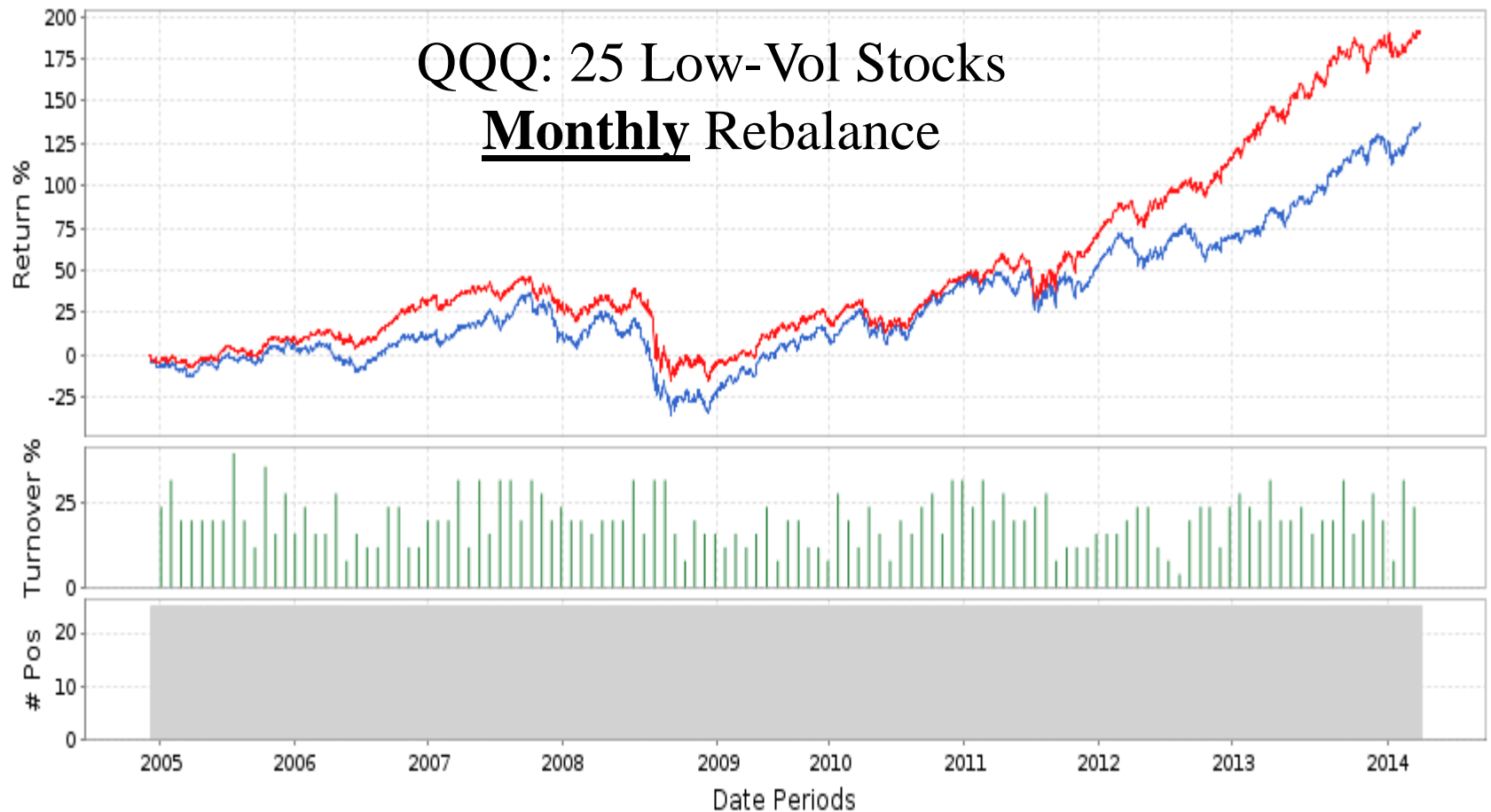


— Screen — S&P 500 Eq Weight ■ Turnover % ■ Number of Positions

Statistics	Total Return	Annualized Return	Max Draw	Sharpe Ratio	Sortino R:	Standard	Correlatio	R-Square	(Beta	Alpha
							Benchmark			
Screen	281.58%	9.03%	-44.23%	0.36	0.46	14.07%	0.49	0.24	0.32	3.84%
S&P 500 E	198.87%	7.33%	-60.83%	0.16	0.21	21.15%	-	-	-	-

QQQ: 25 Low-Vol Stocks

Monthly Rebalance



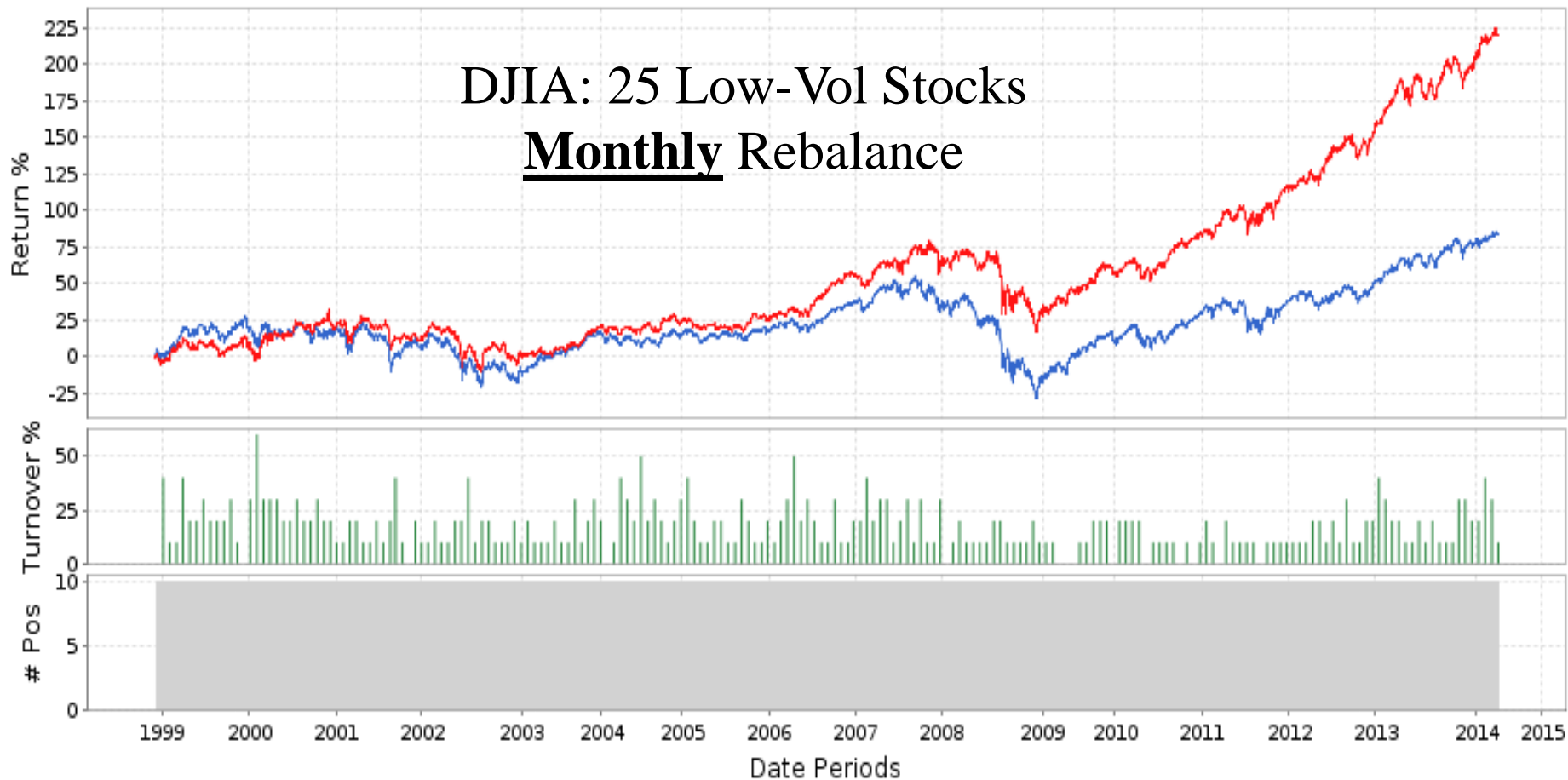
— Screen — Nasdaq 100 █ Turnover % █ Number of Positions

Statistics

	Total Return	Annualized Return	Max Drawdown	Sharpe Ratio	Sortino Ratio	Standard Deviation	Correlation with Benchmark	R-Squared	Beta	Alpha
Screen	191.15%	11.92%	-42.42%	0.49	0.64	17.30%	0.76	0.57	0.7	4.12%
Nasdaq 100	137.15%	9.53%	-53.13%	0.33	0.42	18.75%	-	-	-	-

DJIA: 25 Low-Vol Stocks

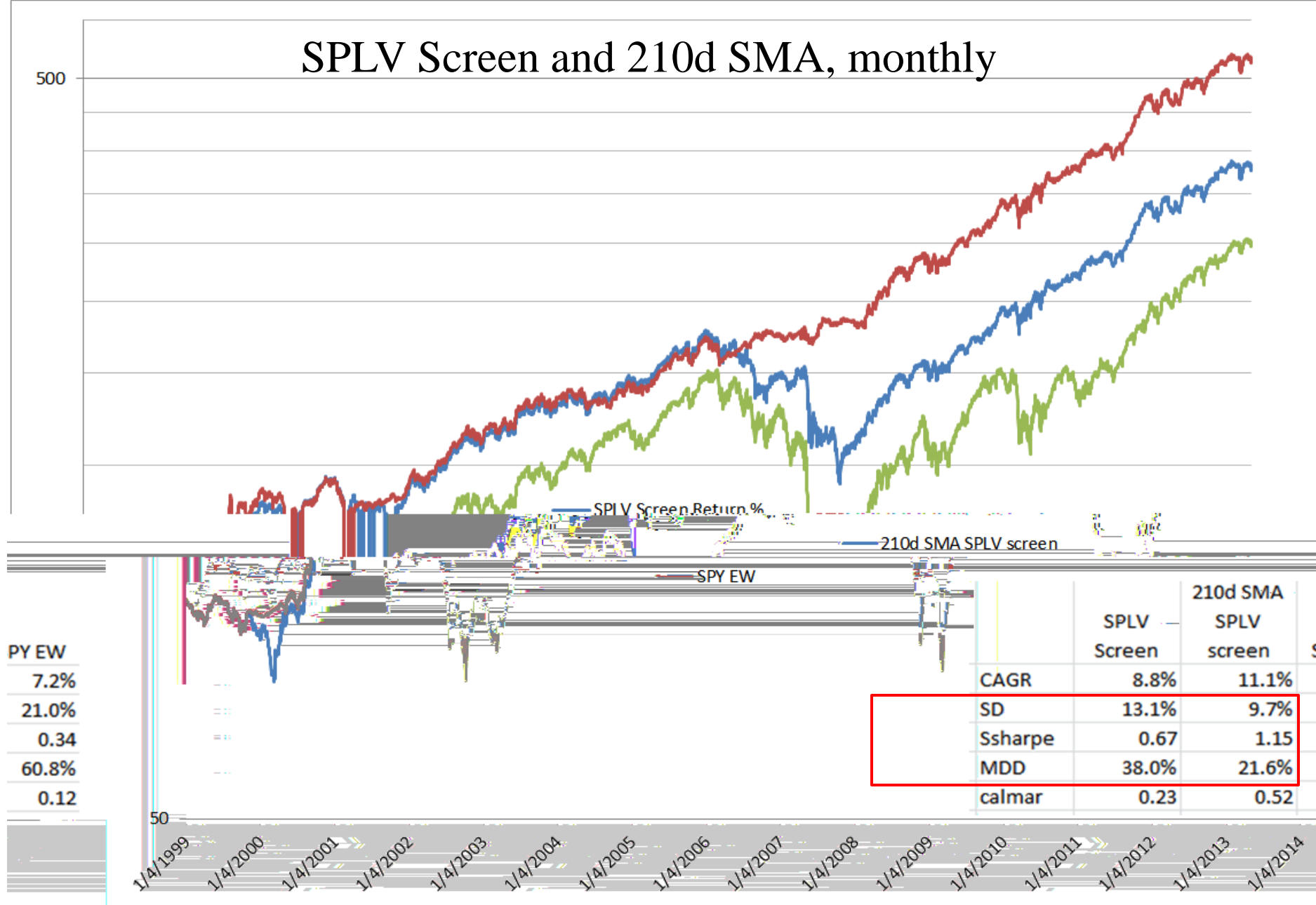
Monthly Rebalance



— Screen — Dow Jones █ Turnover % █ Number of Positions

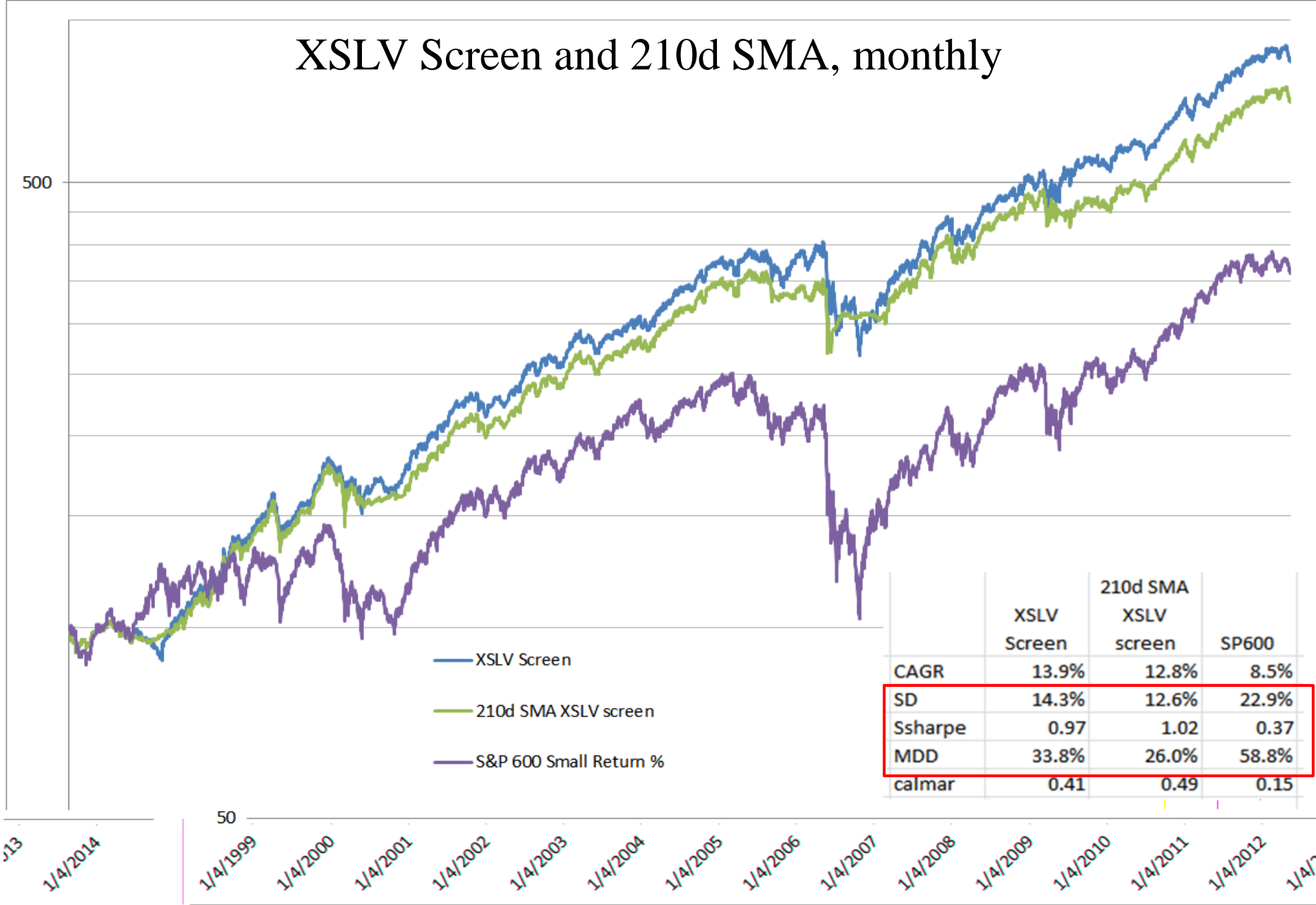
Statistics										
	Total Return	Annualized Return	Max Drawdown	Sharpe Ratio	Sortino Ratio	Standard Deviation	Correlation with Benchmark	R-Squared	Beta	Alpha
Screen	220.64%	7.81%	-34.53%	0.26	0.35	14.79%	0.64	0.41	0.5	3.70%
Dow Jones	83.49%	4.00%	-53.78%	0	0	18.86%	-	-	-	-

SPLV Screen and 210d SMA, monthly



PY EW
7.2%
21.0%
0.34
60.8%
0.12

XSLV Screen and 210d SMA, monthly



	XSLV Screen	210d SMA XSLV screen	SP600
CAGR	13.9%	12.8%	8.5%
SD	14.3%	12.6%	22.9%
Ssharpe	0.97	1.02	0.37
MDD	33.8%	26.0%	58.8%
calmar	0.41	0.49	0.15

Reference Material

Web Sites, Tools, Data Sources, etc.

General information

<http://www.aaii.com> articles, spreadsheets, portfolios, etc.

<http://finance.yahoo.com/?u> great general site

Blogs

<http://www.hussmanfunds.com> blog, economic financial studies

<http://www.ritholtz.com/blog/> Famous financier blog

<http://www.johnmauldin.com/> Another famous financier

Data, reference sites

<http://www.investorwords.com/> investment dictionary

<http://www.standardandpoors.com/home/en/us> S&P site

<http://www.wikiposit.org/w> great free financial data

<http://www.calculatedriskblog.com/> the best pure economic charting site

<http://research.stlouisfed.org/fred2/series/STLFSI/downloaddata?cid=98>

Web Sites, Tools, Data Sources, etc.

Tools

<http://www.assetcorrelation.com/> Generates correlations across instruments

<http://stockcharts.com/> Draw complex charts

<http://www.google.com/> Can find anything

<http://www.keelix.com/backtester/> (free SIPro back tester)

<http://sumgrowth.com/> momentum & timing site (fees after trial period)

<https://www.vectorvest.com/vvlogin/login.aspx> back testing tool (fees)

<http://www.portfolio123.com/> back testing toll (fees)

<http://www.qmatix.com/XLQ.htm> (good Excel plug-in for Yahoo! Data, SIPro)

Excel, Visual Basic: do a lot of hacking with this tool

SIPro: best reasonably priced stock screener out there

Economics, Finance sites

<http://advisorperspectives.com/dshort/> mix of economic and market, very understandable, lots of fun charts

<http://www.businesscycle.com/> ECRI famous economic forecaster, downloadable info

<http://www.angrybearblog.com/> economic policy (arguments)

<http://gfs.eiu.com/about/> monthly economic forecast (free I think)

Quant sites (mostly blogs)

<http://cssanalytics.wordpress.com/> Lots of algs, models, ideas

<http://www.cxoadvisory.com/> Lots of algs, models, economic forecasts, etc

<http://www.mebanefaber.com/>

<http://marketsci.wordpress.com/> Lots of algs, models, ideas

<http://boards.fool.com/mechanical-investing-100093.aspx> board with lots of ideas, algs