

INVESTMENT PROGRAM

SYSTEMATIC VOLATILITY STRATEGY



Investment opportunity



THE OPPORTUNITY

- Compound annual growth rate over 60%, net of fees
- Sharpe Ratio > 4.8
- Liquid, exchange-traded ETF assets with daily MTM
- Daytrading strategy with no overnight exposure
- Maximum intraday drawdown -8.15%
- Fully automated, efficient algorithmic execution

PORTFOLIO MANAGER



Jonathan Kinlay, Portfolio Manager

- Partner, Systematic Strategies (2009 -)
Proprietary trading firm trading high frequency strategies
- Managing Director, Bear Stearns (2007-2008)
Global Head of Model Review
- Partner, Proteom Capital (2004-2007) Equity long/short
strategy using machine learning algorithms
- Partner, Caissa Capital (2001-2004) Top performing
volatility arbitrage fund with \$400M AUM
- Finance faculty Carnegie Mellon and NYU 1997-2007
- PhD Economics, MSc Statistics, MBA



BUILDING ON SUCCESS

Systematic Strategies opened its Levered Volatility ETF Strategy to external investors in 2012. The strategy produced a CAGR in excess of 50% and realized Sharpe Ratio of 3, over the four year period to the end of 2015, when the strategy was closed to new investors.

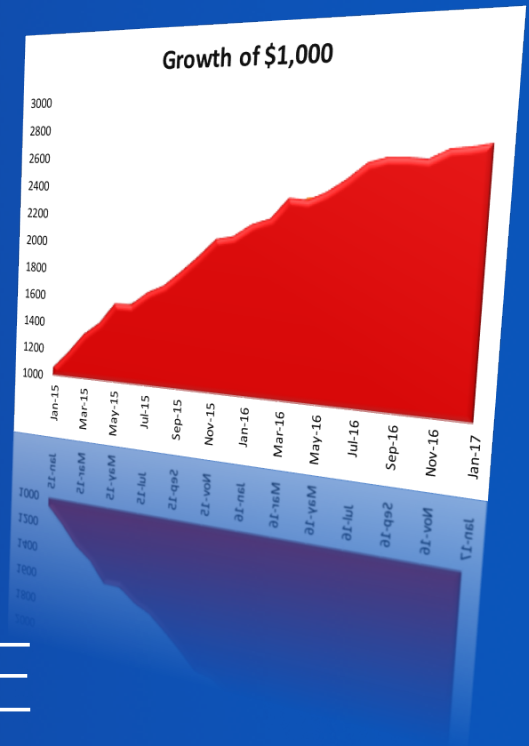
Anticipating that investors would quickly absorb the limited capacity in the strategy, the firm developed a successor product, which commenced trading in 2015 and opened to external investors in July 2016.

The new strategy make use of algorithms developed for the original strategy, but has extended the investment concept in several ways in order to increase capacity, eliminate overnight risk and improve risk-adjusted performance.



REASONS TO INVEST NOW

- YTD returns for 2016 exceeded 28%, net of fees
- Continued high Sharpe ratio of 3.91 during 2016
- The size and liquidity of the underlying ETF products constrain strategy capacity
- Min. Managed Account size to increased to \$500,000
- Hedge fund open for investment (\$250,000 minimum)



PERFORMANCE

Strategy performance is evaluated in-sample using daily data for synthetic ETF series constructed from prices of the front-month VIX futures contracts in the period from 2004 to 2011.

Strategies that produced stable out-of-sample performance consistent with in-sample results were further evaluated in simulated trading.

An earlier version of the strategy, the Levered Volatility ETF Strategy, was run live in managed accounts from 2012, producing annual returns in excess of 50%. The strategy was closed to new investors at the end of 2015.

The new Systematic Volatility Strategy has run live from 2015 and is accepting new accounts from July 2016.

Compared to the original version of the strategy, the Systematic Volatility Strategy operates on a similar investment universe, but with greater emphasis on higher frequency, intraday trading models that incur no overnight risk. The new strategy has greater capacity, higher expected returns, lower volatility and lower average and maximum drawdown.

Disclaimer

Past performance does not guarantee future results. You should not rely on any past performance as a guarantee of future investment performance. Investment returns will fluctuate. Investment monies are at risk and you may suffer losses on any investment.

SYSTEMATIC VOLATILITY STRATEGY

DESCRIPTION

The Systematic Volatility strategy uses mathematical models to quantify the relative value of ETF products based on the CBOE S&P500 Volatility Index (VIX) and create a positive-alpha long/short volatility portfolio. The strategy is designed to perform robustly during extreme market conditions, by utilizing the positive convexity of the underlying ETF assets. It does not rely on volatility term structure (“carry”), or statistical correlations, but generates a return derived from the ETF pricing methodology. The net volatility exposure of the portfolio may be long, short or neutral, according to market conditions. Portfolio holdings are implemented daily using execution algorithms that minimize market impact to achieve the best available market prices.

MONTHLY RETURNS (Net of Fees)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	Ann. SD	IR
2017	0.89%												0.89%		
2016	3.96%	1.97%	6.25%	-0.41%	2.43%	3.59%	3.99%	1.16%	0.30%	-0.59%	2.64%	0.17%	28.33%	7.25%	3.91
2015	6.69%	11.89%	11.36%	7.03%	10.23%	0.24%	5.95%	3.09%	6.15%	6.01%	6.27%	1.11%	107.61%	12.67%	8.49

RISK CONTROL

Our portfolio is not dependent on statistical correlations and is always hedged. We never invest in illiquid securities. We operate hard exposure limits and caps on volume participation.

MANAGER



Dr. Jonathan Kinlay is the founder of Systematic Strategies, a systematic hedge fund that deploys high frequency trading strategies using news-based algorithms.

He was the General Partner of the Caissa Capital hedge fund, which managed over \$400M in assets using volatility arbitrage algorithms developed by Dr. Kinlay's research firm, Investment Analytics. Dr. Kinlay went on to establish Proteom Capital, whose trading algorithms were based on pattern recognition techniques used in DNA sequencing. Dr. Kinlay was formerly Global Head of Model Review of the US investment bank Bear Stearns.

Dr. Kinlay holds a PhD in economics and has held positions on the faculty of New York University's Stern School of Business, Carnegie Mellon University and Reading University.

CONTACT: info@systematic-strategies.com

Disclaimer

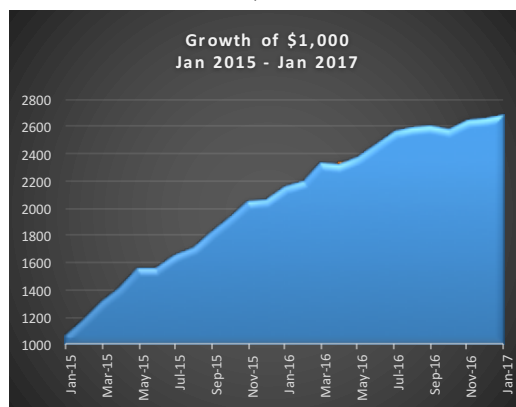
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OPERATIONS

We operate fully redundant dual servers operating an algorithmic execution platform designed to minimize market impact and slippage. The strategy is not latency sensitive.

HIGHLIGHTS

- ❖ CAGR over 60% annually, net of fees
- ❖ Sharpe ratio in excess of 4.8 from inception
- ❖ Max drawdown -8.15%
- ❖ Liquid, exchange-traded ETFs
- ❖ Fully automated, algorithmic execution
- ❖ Intraday trading with no overnight risk
- ❖ Managed accounts with daily MTM
- ❖ Minimum fund investment \$250,000
- ❖ Fee structure 2%/25%

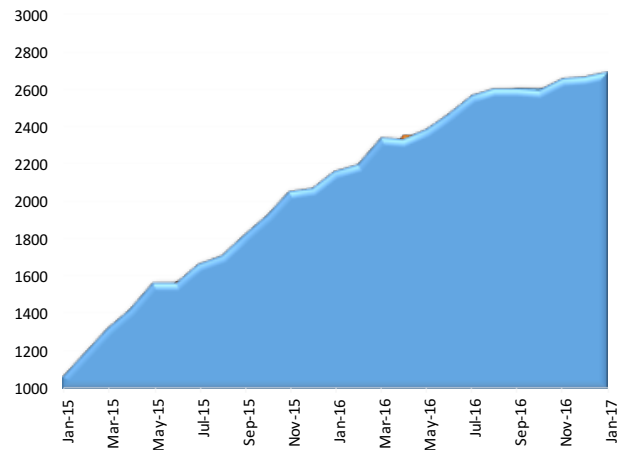


Performance Results 2015-2017

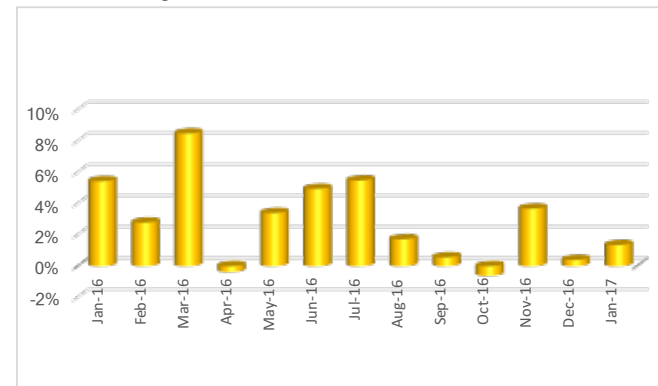
Jan 2015 - Jan 2017

Total Return (net of fees)	168.8%
Av. Monthly Return	4.09%
CAGR	60.7%
Ann. Stdev.	12.55%
Information Ratio	4.84
# Months	25
# Profitable	23
Best Month	11.89%
Worst Month	-0.59%
Monthly Win Rate	92%
Profit Factor	1.39
% Profitable Trades	51%
Trade Win/Loss Ratio	1.35
Return on Max Portfolio Drawdown	1504%
Net Profit as % of Max Trade Drawdown	5578%
Skewness	0.68
Kurtosis	-0.27
Correlation with S&P 500	0.23
Maximum Intraday Drawdown	-8.15%
Drawdown Date	11/4/16
Maximum Close-to-Close Drawdown	-5.18%
Drawdown Date	11/4/16

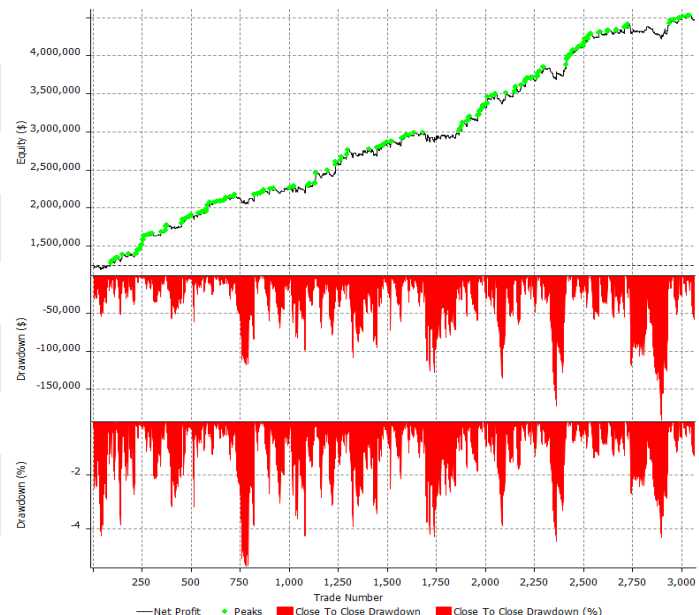
Growth of \$1,000



Monthly Returns



Equity and Drawdown



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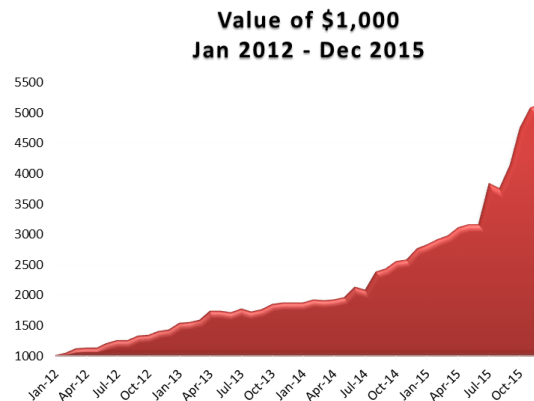
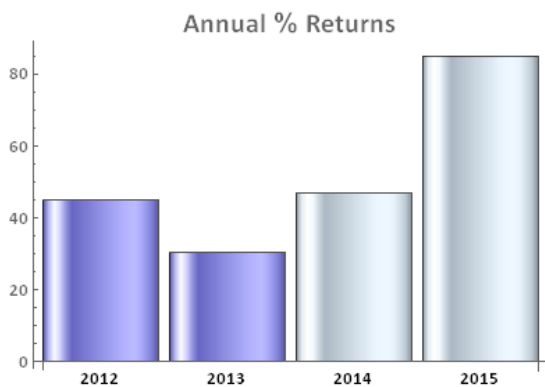
Performance Results 2004-2015

Live Performance Results – Levered Volatility ETF Strategy

The Levered Volatility ETF Strategy, the precursor to the new Systematic Volatility Strategy, was run in proprietary and managed accounts from 2012-2015. The strategy was closed to new investors at the end of 2015 and replaced with the Systematic Volatility Strategy, which operates on a similar investment universe, but with greater emphasis on higher frequency, intraday trading models.

The live performance results achieved by the Levered Volatility ETF strategy were as follows:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	Annual Return	Annual Std.	Sharpe Ratio	Max Drawdown
2015	1.95%	3.13%	2.04%	4.41%	1.89%	-0.13%	21.28%	-2.33%	10.44%	14.40%	7.01%	1.30%	84.94%	84.94%	23.59%	3.60	-14.57%
2014	-0.31%	2.43%	-0.05%	0.13%	2.14%	8.84%	-2.45%	14.15%	2.16%	4.66%	1.42%	7.10%	46.93%	46.93%	16.14%	2.91	-13.40%
2013	6.90%	1.07%	2.80%	8.90%	0.13%	-1.41%	3.70%	-2.88%	2.07%	4.51%	1.63%	0.06%	30.44%	30.44%	11.64%	2.62	-4.38%
2012	3.35%	2.64%	6.76%	1.18%	0.32%	7.01%	3.68%	0.19%	5.87%	0.41%	4.40%	2.28%	45.03%	45.03%	8.51%	5.29	-4.32%



Back-Test Results with VIX Futures

Many volatility ETF/ETN products have a relatively short history and it is consequently difficult to provide back-test results prior to 2010. However, certain of the ETN components are priced directly from the VIX futures series, which have traded since 2004. We have used VIX futures data to price synthetic versions of the ETN products and to provide the following back-test analysis. The results suggest that the strategy could be implemented as a CTA product, with VIX futures substituted for the ETF/ETN products currently traded. Capacity in a CTA version of the strategy is likely to be in the range from \$500M to \$1Bn.

Portfolio Returns	Month	1	2	3	4	5	6	7	8	9	10	11	12	YTD	Ann.Return	Ann Std.	Sharpe
2011		5.83%	5.27%	7.53%	5.96%	5.39%	3.56%	4.18%	5.92%	29.84%	7.34%	17.38%	14.84%	113.02%	113.02%	26.62%	4.24
2010		4.86%	6.62%	4.10%	5.57%	18.80%	8.20%	5.55%	3.86%	5.00%	5.57%	6.37%	0.24%	74.75%	74.75%	15.24%	4.91
2009		10.49%	4.32%	7.83%	2.48%	4.21%	3.86%	3.19%	2.09%	3.93%	5.18%	4.67%	3.52%	55.78%	55.78%	8.14%	6.86
2008		2.95%	2.50%	4.64%	4.84%	5.77%	4.33%	5.14%	3.48%	9.27%	26.51%	14.25%	5.21%	88.88%	88.88%	23.61%	3.76
2007		4.75%	10.82%	6.46%	3.52%	1.37%	2.04%	1.32%	11.63%	8.06%	5.96%	9.10%	3.83%	68.87%	68.87%	12.35%	5.58
2006		3.26%	2.17%	1.70%	1.39%	1.84%	12.50%	3.99%	4.05%	3.23%	6.34%	2.97%	1.76%	45.19%	45.19%	10.67%	4.23
2005		2.61%	3.90%	0.29%	3.37%	4.90%	2.20%	3.47%	1.18%	2.14%	1.03%	4.61%	1.89%	31.61%	31.61%	5.02%	6.30
2004				0.78%	3.87%	4.29%	3.85%	1.93%	3.96%	4.40%	2.14%	4.17%	3.10%	32.49%	38.98%	4.25%	9.16

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STRATEGY ALPHA

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	0.0094	0.0023	62.12	3.42E-42
Residual	474	0.0179	0.0000		
Total	478	0.0272			

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.0043	0.0004	10.73	3.47E-24
VIX	-0.0601	0.0045	-13.44	4.07E-35
VIX^2	-0.0013	0.0083	-0.16	0.871526
VIXL1	0.0681	0.0044	15.65	8.26E-45
VVIX Change	0.0018	0.0056	0.33	0.74

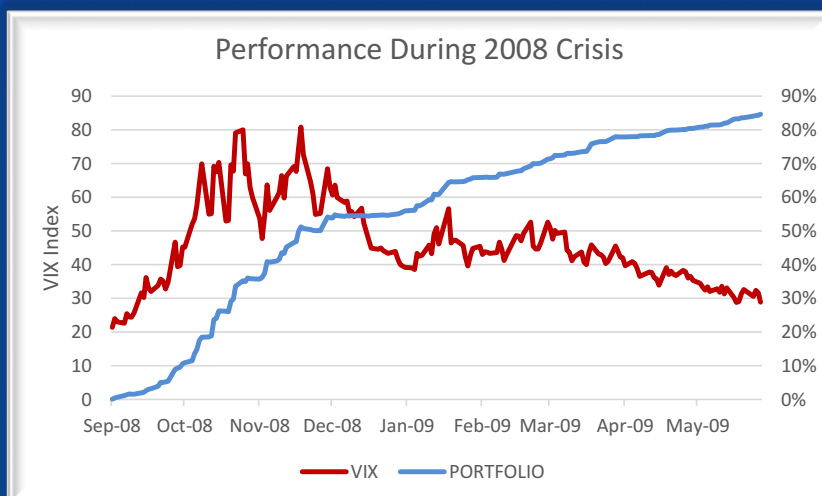
- Approx 34% of strategy returns explained by volatility factors
- Alpha is positive (0.43% daily) and statistically significant
- Response to VIX changes are equal and opposite at one period lag
- Non-linear response to VIX changes is negative, but much smaller
- Small but positive response to increases in VIX volatility
- No significant contribution from volatility futures roll (not shown)

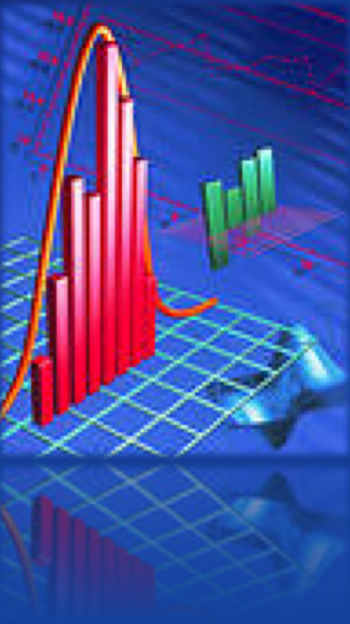


STRATEGY ROBUSTNESS

Although the strategy portfolio correlates negatively with the VIX volatility index, our tests show that it continues to perform well during periods of market stress, such as the banking crisis of 2008, when the VIX index was at an all-time high.

This is due to the ability of the model to adapt to changes in market volatility and adjust the portfolio composition. This has the effect of creating highly-desirable *positive convexity* in the investment portfolio, producing greater robustness in strategy performance.





RISK MANAGEMENT

- Exposure to forward volatility curve only
- Low-risk spreads portfolio with limited basis risk
- Does not rely on statistical correlations
- Max 15% av. daily volume in least liquid ETF
- AUM capped at 15% of ETF with lowest total assets



OPERATIONS

- Dual servers with redundant data feeds and trading platforms to ensure robust execution
- Execution optimized algorithmically to reduce market impact and slippage
- All positions are closed by the end of the trading session
- Strategy is not latency sensitive
- Wide choice of broker/trading platform (e.g. GSET, BAML, IB)
- All securities exchange listed, daily MTM valuation

INVESTMENT TERMS

- Investment partnership: Managed Account or Hedge Fund
- Fee structure: 2% / 25%
- Minimum investment:
 - \$250,000 for hedge fund investors
 - \$500,000 for managed account investors
- Capacity limited to \$300,000,000
- High water mark
- Monthly liquidity

ABOUT US

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INVESTMENT STRATEGIES

A SYSTEMATIC APPROACH TO INVESTMENT MANAGEMENT

Since 2009 Systematic Strategies has been developing and managing algorithmic trading strategies that offer outstanding returns, low levels of market risk and correlation, together with exceptional liquidity and transparency.

Our strategies invest in assets that can readily be liquidated to cash on a daily basis.

Our firm operates a managed account platform offering investors the assurance of 100% transparency and full operational control, together with end of day transaction and P&L reporting.

The management team comprises seasoned professionals with many years of experience as quantitative analysts, traders and fund managers at leading hedge funds and investment banking institutions.

For more information about the firm and our investment strategies, please contact us.

+ QUANTITATIVE RESEARCH

+ PROPRIETARY TRADING

+ HIGH FREQUENCY TRADING

+ VOLATILITY ARBITRAGE

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