# Lenwood Volatility Control Index

Quarterly Performance Report June 30, 2016



Index Methodologies, LLC

# **Executive Summary**



- Global equities experienced another turbulent quarter as "weak1" but "steadying1" economic growth produced tepid April equity market gains as measured by most benchmarks. May's solid U.S equity markets performance was met with volatile June performance resulting from the United Kingdom's European Union membership referendum or "Brexit". The Lenwood Volatility Control Index's rules-based volatility overlay mechanism automatically reduced portfolio exposure to markets in the face of this unusually high Brexit-related price fluctuations and thus, the index was at less than full exposure for 22 days during the quarter, primarily in June.
- The Brexit volatility and heightened impact concerns in the last ten days of the second quarter forced the U.S. Federal Reserve to soften their "rate-hike expectations1" as worldwide bonds yields decreased in the quarter. Europe and Japan experienced further negative interest rates across much of their yield curves.
- Bonds had anther good quarter as interest rates declined further across the fixed income yield curve. The Lenwood index had a
  40% fixed income allocation in April and only 10% allocations in May and June as the rules-based LVCI portfolio design algorithm
  graded equities as deserving of higher portfolio allocations than bonds. The benchmark Barclays Aggregate Bond Index had a
  2.21% return for the quarter and 6.00% return for the year.
- In describing the LVCI's quarterly equity asset class allocation and associated performance, beginning with April: the LVCI index held a 60% allocation to strategic equities in a month in which equities experienced tepid performance. During May, the LVCI index had a 70% portfolio exposure to equities in a month in which equities had strong performance. The quarter ended with June reflecting a 90% exposure to stocks for the LVCI index in an exceedingly volatile month with the Brexit occurrence. Poor equity performance for the month, marginal fixed income contribution due to the small bond allocation and greatly reduced portfolio exposure in the face of substantial volatility positioned the Lenwood's performance at flat for the quarter.

• Lenwood Volatility Control Index performance for 2<sup>nd</sup> Quarter 2016: 0.04% [YTD: 1.03%]

Benchmark 1: S&P 500 Total Return Index for 2<sup>nd</sup> Quarter 2016: 2.46% [YTD: 3.84%]

Sources: Fidelity Investments' "Third Quarter 2016 Quarterly Market Update"<sup>1</sup>, LPL Research's "Market Insight Quarterly, Second Quarter 2016 In Review as of July 8, 2016<sup>2</sup>, JPMorgan's "Market Insights: Guide to the Markets®" as of 6/30/16, "Schroders Quarterly Markets Review", July 2016, U.S. Department of Commerce Bureau of Economic Analysis website, Bloomberg News

# LVCI Constituents for April 2016

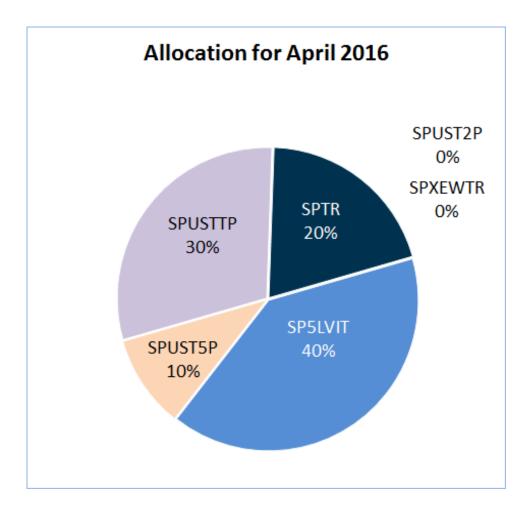


### **Universe of LVCI Constituents**

Underlying Index	Bloomberg Ticker
S&P 500 Total Return Index	SPTR Index
S&P 500 Low Volatility Total Return Index	SP5LVIT Index
S&P 500 Equal Weight Total Return Index	SPXEWTR Index
S&P 2-Yr U.S. Treasury Note Futures Index ER	SPUST2P Index
S&P 5-Yr U.S Treasury Note Futures Index ER	SPUST5P Index
S&P 10-Yr U.S. Treasury Note Futures Index ER	SPUSTTP Index

### **Top Four LVCI Constituents with Non-Zero Weight**

Rank of Relative Strength	Bloomberg Ticker
1	SP5LVIT Index
2	SPUSTTP Index
3	SPTR Index
4	SPUST5P Index



# LVCI Constituents for May 2016

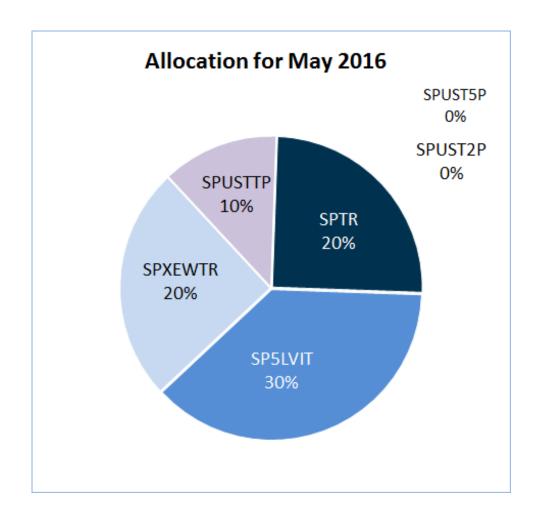


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S&P 10-Yr U.S. Treasury Note Futures Index ER	SPUSTTP Index

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### LVCI Constituents for June 2016

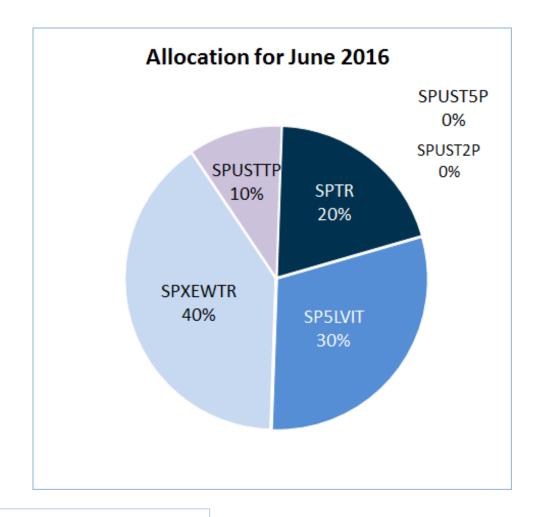


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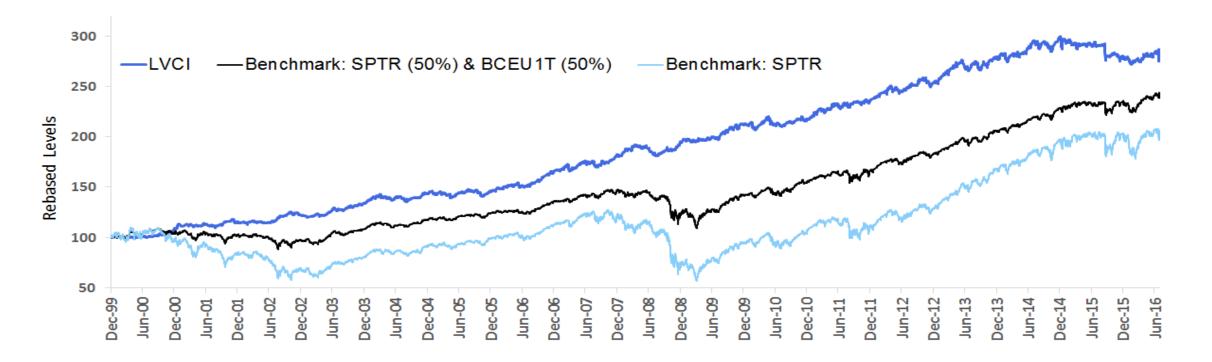


## Historical Performance of LVCI vs. Benchmarks



(December 01, 1999 – June 30, 2016)\*

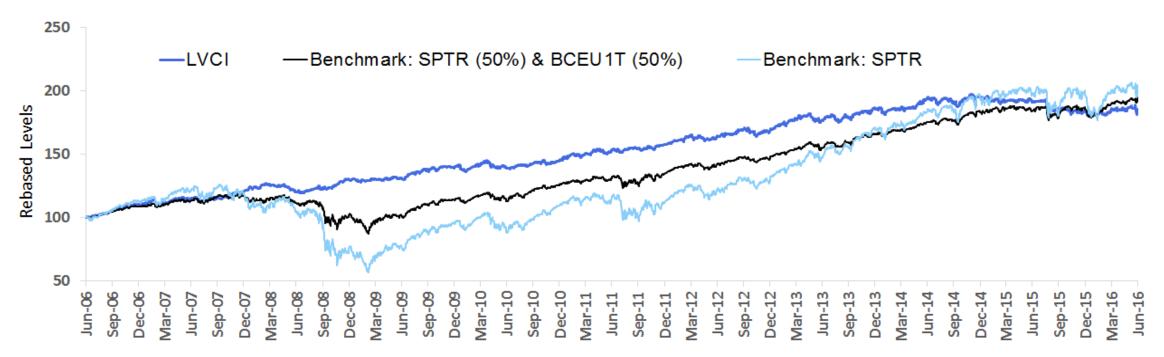
	Annualized Return	Standard Deviation	Sharpe Ratio	Crisis drawdown (Oct 2007 to Oct 2008)
LVCI	6.43%	5.94%	1.08	-5.99%
Benchmark: SPTR (50%) & BCEU1T (50%)	5.52%	9.40%	0.59	-20.90%
Benchmark: SPTR	4.47%	20.05%	0.22	-44.55%



## 10 Years Performance of LVCI vs. Benchmarks

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(June 30, 2006 – June 30, 2016)\*



Returns for the period ending June 30, 2016**							
MTD QTD YTD One year Since inception*							
LVCI	-0.64%	0.04%	1.03%	-3.07%	6.43%		
Benchmark: SPTR (50%) & BCEU1T (50%)	1.35%	2.44%	4.99%	5.75%	5.52%		
Benchmark: SPTR	0.26%	2.46%	3.84%	3.99%	4.47%		

<sup>\*</sup>Simulated performance period: December 01, 1999 to May 27, 2014; Actual performance period: May 28, 2014 onwards

<sup>\*\*</sup>Returns for MTD, QTD, YTD and One year; Annualized returns for the period 'Since Inception'

## Performance: LVCI vs. Constituents



Historical Performance for the Period: December 01, 1999 – June 30, 2016*						
	Annualized Return	Standard Deviation	Sharpe Ratio	Crisis drawdown (Oct 2007 to Oct 2008)		
LVCI	6.43%	5.94%	1.08	-5.99%		
SPTR	4.47%	20.05%	0.22	-44.55%		
SP5LVIT	9.98%	14.66%	0.68	-31.38%		
SPXEWTR	8.69%	21.42%	0.41	-48.42%		
SPUST2P	1.56%	1.62%	0.96	-2.36%		
SPUST5P	3.53%	4.08%	0.86	-5.06%		
SPUSTTP	4.89%	6.30%	0.78	-5.95%		

Returns for the period ending June 30, 2016**						
	MTD	QTD	YTD	One year	Since Inception*	
LVCI	-0.64%	0.04%	1.03%	-3.07%	6.43%	
SPTR	0.26%	2.46%	3.84%	3.99%	4.47%	
SP5LVIT	5.75%	6.75%	12.32%	19.72%	9.98%	
SPXEWTR	-0.06%	2.66%	5.79%	2.73%	8.69%	
SPUST2P	0.65%	0.39%	1.06%	0.70%	1.56%	
SPUST5P	1.70%	1.15%	3.65%	3.61%	3.53%	
SPUSTTP	2.54%	2.05%	5.97%	6.74%	4.89%	

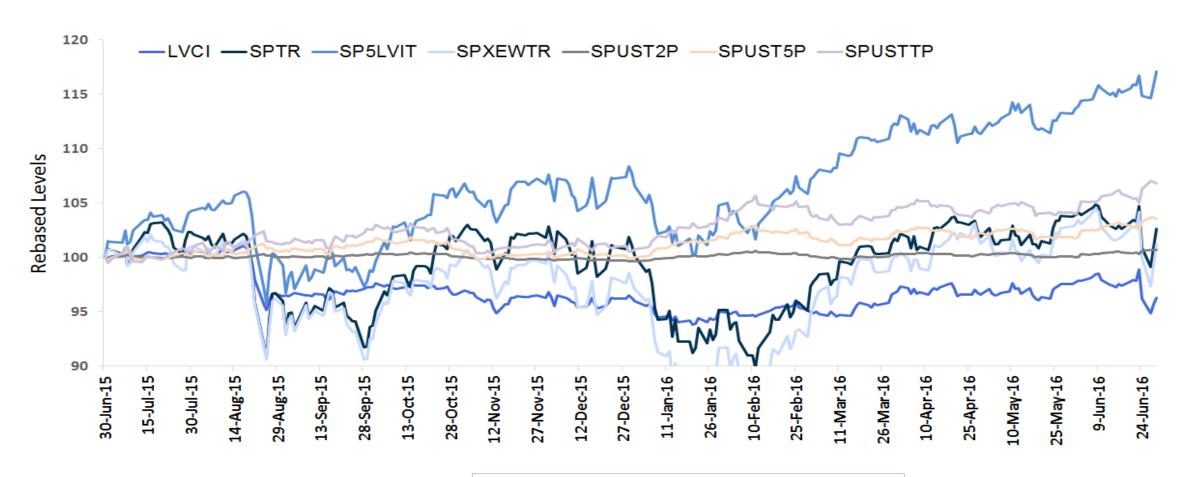
<sup>\*</sup>Simulated performance period: December 01, 1999 to May 27, 2014; Actual performance period: May 28, 2014 onwards

<sup>\*\*</sup>Returns for MTD, QTD, YTD and One year; Annualized returns for the period 'Since Inception'

### 1 Year Performance of LVCI vs. Constituents

(June 30, 2015 – June 30, 2016)







### Disclaimer

Index Methodologies, LLC ("IM") owns all rights to the Lenwood Volatility Control Index<sup>™</sup>, including the index methodology that enables the Lenwood Volatility Control Index<sup>™</sup>. IM developed and maintains, and is solely responsible for, the methodology used by Lenwood Volatility Control Index<sup>™</sup>. IM does not sponsor, endorse, promote or sell any annuity contract or other investment product that provides or attempts to provide a return based on returns of the Lenwood Volatility Control Index<sup>™</sup>. Any decision to invest in such an annuity contract or other investment product should not be made in reliance on any statements set forth herein, but rather should only be made after carefully considering the risks detailed in the materials prepared by or on behalf of the issuer of such contract or product. "Lenwood Volatility Control Index <sup>™</sup>" and "Index Methodologies<sup>™</sup>" are trademarks of Index Methodologies, LLC.

### Performance



#### **Simulated Operating History**

The Index will be first calculated on a live basis on or around the Live Date and therefore lacks actual historical performance. The Calculation Agent and the Sponsor have retrospectively calculated the closing levels of the Index from the Base Date to but excluding the Live Date. However, because the Index will not be calculated before the Live Date, all such retrospective closing levels are simulated and must be considered hypothetical and illustrative only.

Simulated data prior to the Live Date may be constructed using certain procedures that vary from the procedures used to calculate the Index following its establishment and on the basis of certain assumptions that may not apply in the future. Although these assumptions are considered reasonable or necessary, the variations used in producing simulated historical data from those used to calculate the Index going forward could produce variations in returns of indeterminate direction and amount.

In particular, simulated history for the period from December 31, 1991 to one day prior to Live Date was constructed in two parts: from December 31, 1991 to December 1, 1999 bond futures with Bloomberg tickers TU1 Comdty, FV1 Comdty and TY1 comdty are used. To make the simulated history more representative, from December 2, 1999 to one day prior to Live Date, S&P excess return bond indices with Bloomberg tickers SPUST2P Index, SPUST5P Index, and SPUSTTP Index are used. December 1, 1999 is the earliest date for which S&P excess return indices are available.

To generate live Index Levels US Treasury Note Futures indices with Bloomberg tickers SPUST2P Index, SPUST5P Index, and SPUSTTP Index shall be used as the underlyings.

The actual performance of the Index may be materially different from the results presented in any Simulated Operating History relating to the Index. Past performance should not be considered indicative of future performance.

#### **Future Index Performance**

No assurance can be given that the strategies employed by the Calculation Agent and/or the Sponsor will be successful or that the return on the Index, as demonstrated by the Simulated Operating History, will continue in the future. The Simulated Operating History should not be considered indicative of future performance of the Index as markets are unpredictable.

There can be no assurance that the Index will generate positive returns or outperform any benchmark index or alternative strategy.

For the period using Bloomberg rolled futures, the following Bloomberg settings are used: Prices "Ratio", Adjusted "2", Days "Relative to First Notice".

# LVCI Methodology



Performance of Underlyings

Risk Adjusted Trend Scoring

Relative Strength Scoring and Cash Allocation Determination of Dynamic Participation Factor

Lenwood Volatility Control Index

Indices:

- 1. S&P 500 TR
- 2. S&P 500 Low Vol TR
- 3. S&P 500 EW TR
- 4. S&P 2-Yr U.S. Treasury Note Futures Index ER
- 5. S&P 5-Yr U.S. Treasury Note Futures Index ER
- 6. S&P 10-Yr U.S. Treasury Note Futures Index ER

Determination of allocation to cash:

If less than 3 RATS are negative, consider underlying for relative strength scoring. Else, assign zero weight to the underlying.

Calculation of realized volatility of a notional portfolio to determine dynamic participation factor

(1)

2

3

4

5

6

RATS Calculation for varying periods of performance

Ranking relative strength and allocation:

Rank 1: 40%

Rank 2: 30% Rank 3: 20%

Rank 4: 10%

Volatility control overlay to determine dynamic participation factor and Lenwood Volatility Control Index levels