STRATEGY 201 | EMERGING MARKETS

Using a Low-Volatility Approach to Temper Emerging Market Risk

CONTRIBUTORS

Vinit Srivastava
Head of Strategy Indices
vinit.srivastava@spdji.com

Sabrina Salemi
Analyst
sabrina.salemi@spdji.com

Low-volatility strategies are not new, but they have gained traction in recent years as markets, both developed and emerging, have become increasingly volatile. Emerging markets especially tend to have higher levels of risk than others, but they have lured investors with the potential for higher returns. For example, the S&P Emerging Plus LargeMidCap[1] and the MSCI Emerging Markets Index have each provided annualized returns of about 12% over the past 10 years but with an associated annualized risk of about 23%, as measured by standard deviation.

S&P Dow Jones Indices uses a simple, nonoptimized framework to construct low-volatility indices. Other approaches employ minimum variance optimization strategies. The S&P 500® Low Volatility Index, introduced in April 2011, addressed the need for a benchmark for U.S. equity-based managed volatility strategies. S&P Dow Jones Indices introduced the S&P BMI Emerging Markets Low Volatility Index in December 2011, applying a methodology similar to that of the S&P 500 Low Volatility Index to emerging market equities.

The S&P BMI Emerging Market Low Volatility Index comprises the 200 least-volatile stocks in the S&P Emerging Plus LargeMidCap, which consists of 1,109 stocks as of May 30, 2014. Volatility is measured as the standard deviation of price changes over the trailing 252 days. The universe of stocks is ranked by their volatility factor and the 200 least-volatile stocks are picked and weighted by the inverse of their volatility (i.e., less-volatile stocks are assigned higher weights). The index is rebalanced quarterly.

The S&P BMI Emerging Market Low Volatility Index has outperformed its underlying benchmark and the MSCI Emerging Market Index over the past 10 years, while reducing annualized risk.

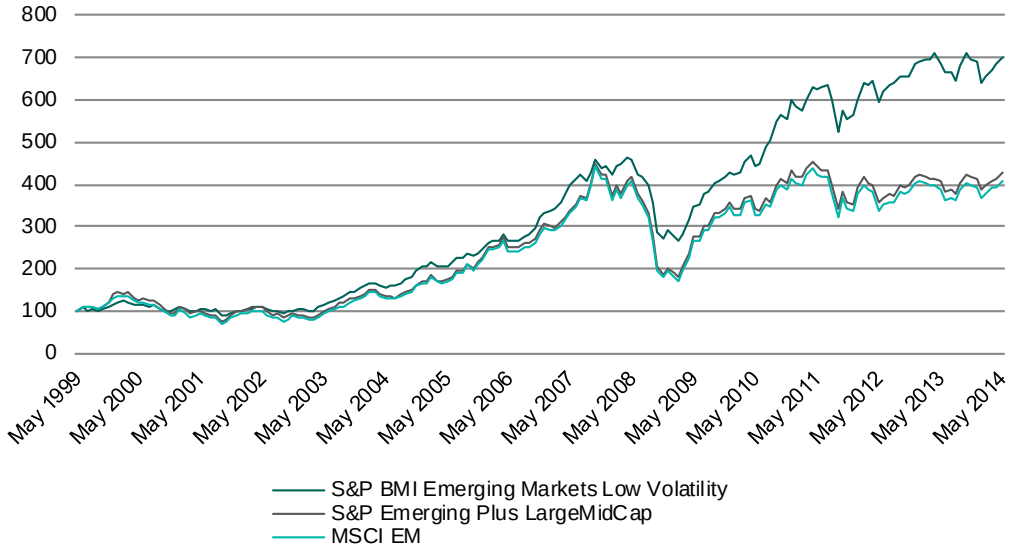
Lower Risk Does Not Have to Mean Lower Returns

The S&P BMI Emerging Market Low Volatility Index has outperformed its underlying benchmark (the S&P Emerging Plus LargeMidCap) and the MSCI Emerging Market Index over the past 10 years, while reducing annualized risk by about 30% (see Exhibit 1).

[1] The S&P Emerging Plus LargeMidCap index is the LargeMidCap slice of the S&P Emerging BMI along with Korea, which S&P Dow Jones Indices classifies as a developed country and is hence excluded from the S&P Emerging BMI

Exhibit 1: Performance of the S&P BMI Emerging Markets Low Volatility Index, S&P Emerging Plus LargeMidCap and the MSCI Emerging Market Index

The movements of the S&P BMI Emerging Market Low Volatility Index do not always mirror those of the underlying benchmark index.



Sources: S&P Dow Jones Indices LLC and MSCI. Data as of May 30, 2014. Charts are provided for illustrative purposes. This chart may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Achieving better returns without taking on a higher level of risk sounds counterintuitive, but it has been well documented in academic studies.[2] The S&P BMI Emerging Markets Low Volatility Index has had better annualized returns than those of the MSCI Emerging Markets Index and the S&P Emerging Plus LargeMidCap over the short, medium, and long term, and those higher returns have been achieved with a lower level of risk (see Exhibit 2).

Exhibit 2: Risk-Return Characteristics of S&P BMI Emerging Markets Index, MSCI Emerging Markets Index, and S&P Emerging Plus LargeMidCap

Time Period	S&P BMI Emerging Markets Low Volatility Index	S&P Emerging Plus LargeMidCap	MSCI Emerging Markets Index
Annualized Return (%)			
1 Year	1.7	5.5	4.6
3 Year	3.7	-1.1	-1.4
5 Year	15.1	9.0	8.7
10 Year	16.0	12.1	12.1
15 Year	13.8	10.2	9.8
Annualized Risk (%)			
3 Year	14.8	19.3	19.4
5 Year	14.2	19.0	19.2
10 Year	16.3	23.4	23.8
15 Year	15.8	23.6	23.3

Sources: S&P Dow Jones Indices LLC and MSCI. Data as of May 30, 2014. Monthly returns data used to compute annualized risk figures. Tables are provided for illustrative purposes. This table may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

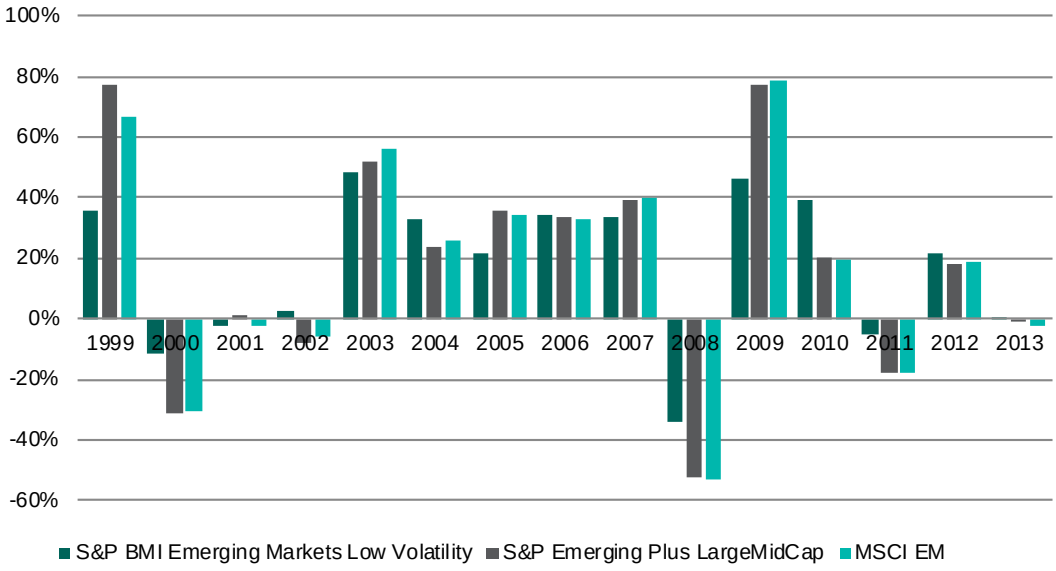
[2] Blitz, D.C and P. van Vliet (2007), The Volatility Effect: Lower Risk Without Lower Return, Journal of Portfolio Management, Vol. 34, No.1; Blitz, D.C and P. van Vliet (2011), Benchmarking Low Volatility Strategies, Journal of Index Investing, Vol. 2, No.1; and Baker, Malcolm, Brendan Bradley and Jeffrey Wurgler (2011), Benchmarks as Limits to Arbitrage: Understanding the Low Volatility Anomaly, Financial Analysts Journal, Volume 67, No.1.

Performance Shifts in Bull and Bear Markets

The movements of the S&P BMI Emerging Market Low Volatility Index do not always mirror those of the underlying benchmark index. In extreme bull markets like the ones seen in 2009, the S&P BMI Emerging Market Low Volatility Index returns usually lagged those of the S&P Emerging Plus LargeMidCap (see Exhibit 3). In calendar year 2009, the S&P BMI Emerging Market Low Volatility Index gained 46.4% versus 77.5% for S&P Emerging Plus LargeMidCap and 79% for the MSCI Emerging Markets Index. However, in extreme bear markets, like those that occurred during 2000 to 2002 and in 2008, the S&P BMI Emerging Market Low Volatility Index tended to outperform the underlying benchmark S&P Emerging Plus LargeMidCap and the MSCI Emerging Markets Index (see Exhibit 3). In 2000 to 2002, the S&P BMI Emerging Low Volatility Index lost 12% while the S&P Emerging Plus LargeMidCap and the MSCI Emerging Markets Index both lost 36%. In relatively less extreme markets, the return of the index is usually close to the benchmarks.

The S&P BMI Emerging Markets Low Volatility Index has historically maintained a very well diversified sector and country exposure.

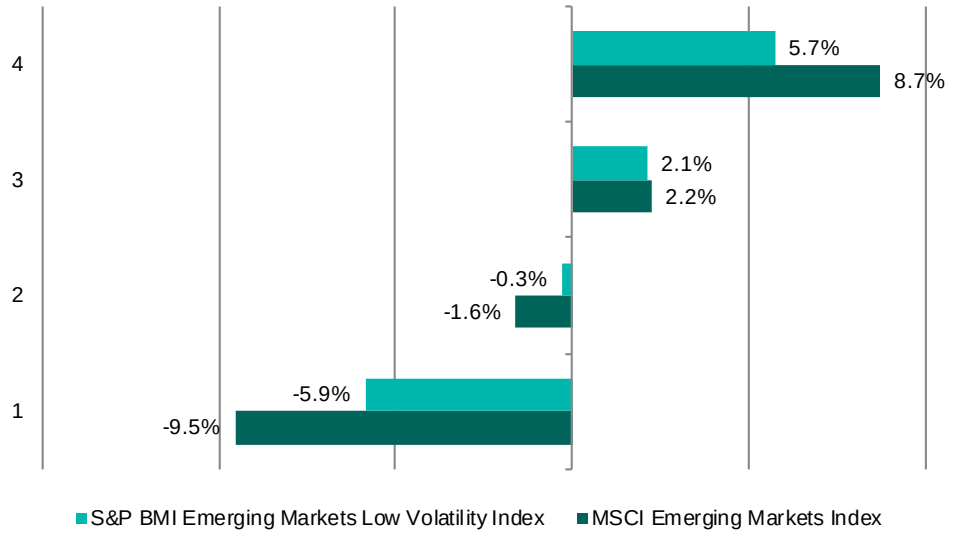
Exhibit 3: Annual Returns of the S&P BMI Emerging Low Volatility Index, S&P Emerging Plus LargeMidCap and the MSCI Emerging Markets Index



Sources: S&P Dow Jones Indices LLC and MSCI. Data as of May 30, 2014. Charts are provided for illustrative purposes. This chart may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Quartile analysis shows the indices' performance in positive and negative markets on an aggregate basis (see Exhibit 4). Splitting returns evenly among positive bull months and negative bear months shows that the S&P BMI Emerging Market Low Volatility Index outperformed the MSCI Emerging Markets Index in severe bear months, underperformed in severe bull months, and stayed closer when the market was less volatile.

Exhibit 4: Quartile Analysis



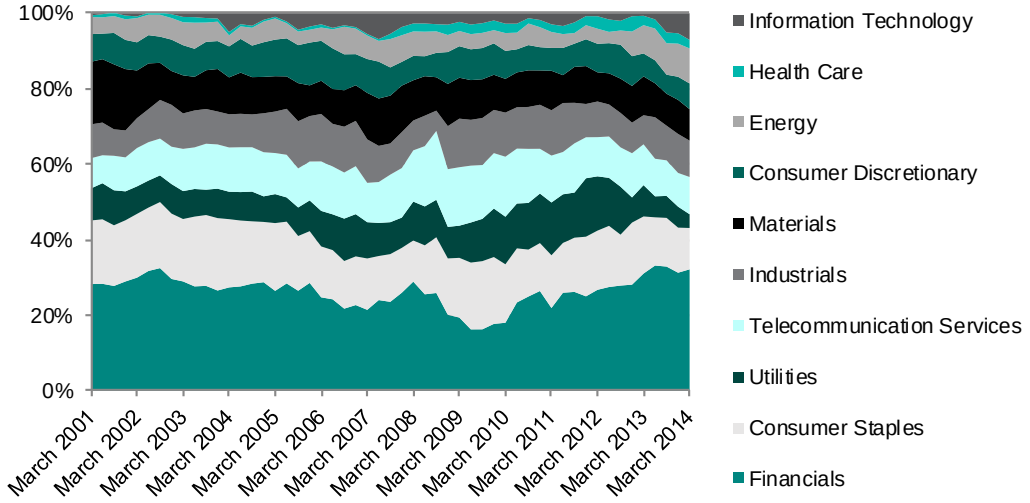
The S&P BMI Emerging Markets Low Volatility Index does not actively manage any country and sector exposures; the changes are driven by the volatility of stocks in those sectors and regions.

Sources: S&P Dow Jones Indices LLC and MSCI. Data as of May 30, 2014. The return space is divided into quartiles (monthly returns above and below 0 are split equally). Within these quartiles, the average returns are shown. Charts are provided for illustrative purposes. This chart may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Adjusting Exposure to Sectors and Countries

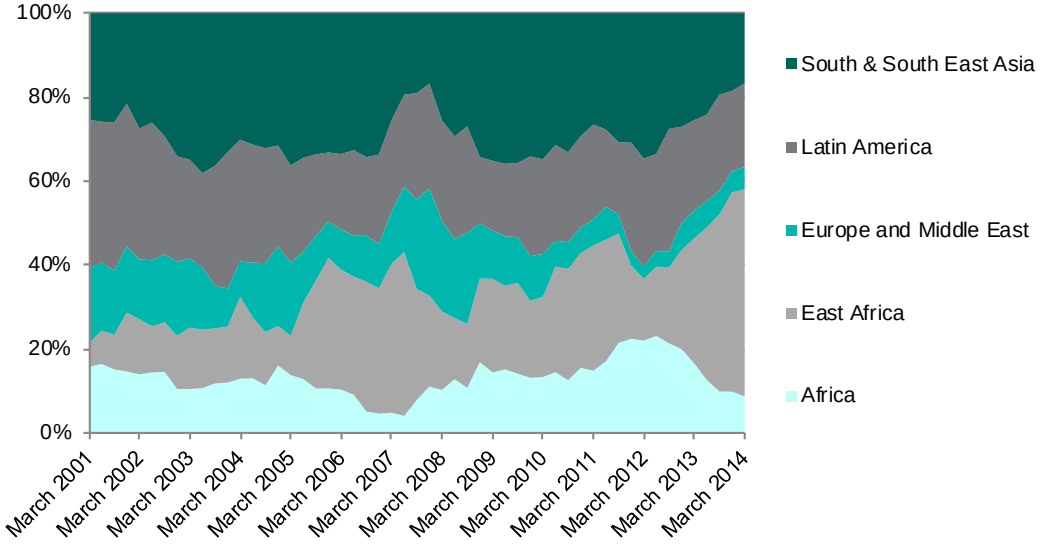
Unlike the S&P 500 Low Volatility Index, the S&P BMI Emerging Markets Low Volatility Index has two variables that can change with time: sector exposure and country exposure. The S&P BMI Emerging Markets Low Volatility Index has historically maintained a very well-diversified sector and country exposure (see Exhibits 5 and 6).

Exhibit 5: Sector Exposure of the S&P BMI Emerging Markets Low Volatility Index



Source: S&P Dow Jones Indices LLC. Data as of May 30, 2014. Charts are provided for illustrative purposes. This chart may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 6: Regional Exposure of the S&P BMI Emerging Markets Low Volatility Index



Reducing risk in a portfolio's emerging market allocation with a blended approach could potentially allow the additional risk exposure be allocated to an alternate asset class or investment strategy.

Source: S&P Dow Jones Indices LLC. Data as of May 30, 2014. The regions have been created using the following groupings – Latin America (Chile, Brazil, Peru, Venezuela, Argentina, Colombia, and Mexico), East Asia (China, Korea, and Taiwan), South and South East Asia (India, Pakistan, Thailand, Philippines, and Indonesia), Africa (Morocco, Nigeria, and South Africa), Europe and Middle East (Poland, Czech Republic, Russia, Israel, Slovenia, Turkey, Hungary, Jordan, and Egypt). Some countries have changed classification from Emerging to Developed or Frontier over the time period. Charts are provided for illustrative purposes. This chart may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Sector exposures remain relatively stable with time and through various economic cycles. This contrasts with the S&P 500 Low Volatility Index where the sector exposure moves more dynamically. There are two factors that may account for this. First, emerging market sectors are not as correlated among themselves as developed country sectors. One reason is that sectors in emerging market countries have different levels of openness to outside investors and are often in different stages of development. As an example, these differences may lead the financial services sector of one emerging market country to be more volatile than one in another country. Second, the S&P BMI Emerging Markets Low Volatility Index covers multiple countries, so it can shift allocations across borders. Exhibit 6 shows the dynamic nature of the country allocations, grouped by regions for better illustration. Two regions draw interest. First, in the second half of 2007, Malaysia (the largest portion of the South Asia allocation in Exhibit 6) was highly volatile due to its exposure to the financial crisis. That resulted in the index reducing that exposure from close to 21% in March 2007 to 11% in March 2008, before rising back to 24% in March 2009. Similarly, the eurozone crisis in 2011 has resulted in decreased exposure to emerging eurozone countries in the index during that time. The S&P BMI Emerging Markets Low Volatility Index does not actively manage any of these country and sector exposures; the changes are driven by the volatility of stocks in those sectors and regions.

Exhibit 7: Country Composition of the S&P BMI Emerging Markets Low Volatility Index

Country	March 2009	Sept. 2009	March 2010	Sept. 2010	March 2011	Sept. 2011	March 2012	Sept. 2012	March 2013	Sept. 2013	March 2014
Malaysia	24.00	25.80	25.50	28.20	23.80	24.70	25.30	21.60	17.39	16.75	15.29
South Africa	8.40	8.60	7.20	9.00	12.70	19.40	19.80	19.10	16.09	9.30	8.18
Taiwan	12.70	13.10	10.50	17.50	19.30	16.80	11.20	14.50	16.24	23.07	26.34
Chile	10.70	11.30	12.30	11.60	10.50	6.90	6.30	10.40	9.92	7.61	4.26
Brazil	2.20	4.30	7.10	5.80	6.50	5.60	8.90	8.80	4.14	9.33	11.00
Colombia	-	-	-	-	-	-	6.00	5.50	2.84	2.78	1.93
Mexico	2.60	1.50	2.10	2.00	4.70	4.70	4.40	3.00	4.63	3.14	2.70
Morocco	6.00	5.60	6.10	3.60	2.10	2.10	2.30	2.30	0.52	0.63	0.60
Korea	9.20	7.60	8.20	7.20	6.20	5.50	2.50	2.30	6.57	10.59	16.26
Philippines	4.20	3.80	4.20	2.70	1.10	0.80	2.60	2.30	1.88	0.47	0.42
Thailand	6.10	5.10	4.30	1.80	1.60	4.40	3.40	2.00	4.44	1.28	0.43
Peru	1.10	0.60	1.00	2.00	0.90	-	-	1.40	-	-	-
China	0.40	0.90	0.40	1.70	4.30	3.70	0.90	1.30	6.96	8.45	6.71

Source: S&P Dow Jones Indices LLC. Data as of May 30, 2014. Tables are provided for illustrative purposes. This table may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Higher Dividend Yields

Investors that currently have allocations in emerging markets can view this strategy as a means to try to reduce their overall portfolio risk without losing the returns.

The S&P BMI Emerging Markets Low Volatility Index provides a higher yield than the underlying benchmark (the S&P Emerging Plus LargeMidCap) and the MSCI Emerging Markets Index. Historical data shows that the S&P BMI Emerging Markets Low Volatility Index yielded between 2.87% and 5.01% over the past five years. As of May 30, 2014, the S&P BMI Emerging Markets Low Volatility Index had an YTD annual yield of 2.88%% while the annual yields of the S&P Emerging Plus LargeMidCap and the MSCI Emerging Markets Index were 2.33%% and 2.71%, respectively.

The Benefits of Low Volatility Indices in Hypothetical Portfolios

To further understand the benefits of using a low-volatility approach with emerging market equities, examine hypothetical portfolios that blend the S&P BMI Emerging Low Volatility Index with the MSCI Emerging Markets Index. A 75% allocation to the MSCI Emerging Markets Index and a 25% allocation to the S&P BMI Emerging Low Volatility Index provides a volatility reduction of close to 20% over a portfolio allocated entirely to the MSCI Emerging Markets Index (see Exhibit 8), over a three-, five- and 10-year period. The returns of the blended portfolio are also higher than ones provided by the MSCI Emerging Markets Index-only portfolio. During the strategic asset allocation process, reducing risk in a portfolio's emerging market allocation with a blended approach could potentially allow the additional risk exposure be allocated to an alternate asset class or investment strategy.

Exhibit 8: Risk-Return Characteristics of Hypothetical Portfolio

Time Period	MSCI Emerging Markets Index (A)	S&P BMI Emerging Markets Low Volatility Index (B)	Hypothetical Portfolios		
			90% A + 10% B	75% A + 25% B	50% A + 50% B
Annualized Returns (%)					
1-Year	4.6	1.7	4.1	3.5	2.7
3-Year	-1.4	3.7	-0.7	0.3	1.7
5-Year	8.7	15.1	9.6	10.8	12.5
10-Year	12.1	16.0	12.6	13.3	14.4
15-Year	9.8	13.8	10.3	11.0	12.1
Annualized Risk (%)					
3-Year	19.4	14.8	18.6	17.6	16.3
5-Year	19.2	14.2	18.3	17.3	15.9
10-Year	23.8	16.3	22.7	21.2	19.2
15-Year	23.3	15.8	22.3	20.8	18.8

Sources: S&P Dow Jones Indices and MSCI. Data as of May 30, 2014. Monthly returns data used to compute annualized risk figures. Tables are provided for illustrative purposes. This table may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Conclusion

The S&P Dow Jones BMI Emerging Markets Low Volatility Index follows a simple, transparent methodology to significantly reduce volatility and deliver higher returns over underlying benchmarks. It provides investors who are seeking exposure to emerging markets but are concerned about volatility with an alternative that has provided similar or better returns at a significantly reduced level of risk. In addition, investors that currently have allocations in emerging markets can view this strategy as a means to try to reduce their overall portfolio risk without losing the returns.

Appendix: S&P BMI Emerging Markets Low Volatility Index and Available ETFs

Index	ETF	Ticker
S&P BMI Emerging Markets Low Volatility Index	PowerShares S&P Emerging Markets Low Volatility Portfolio	EELV

For a detailed list of the parameters for the index, please visit:
http://www.spindices.com/indices/strategy/sp-bmi-emerging-markets-low-volatility-index

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PERFORMANCE DISCLOSURES

The S&P Emerging Plus LargeMidCap and the S&P BMI Emerging Markets Low Volatility Index (the "Index") were launched on Dec. 5, 2011. All information presented prior to the launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spdji.com. It is not possible to invest directly in an index.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency on their products. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indicates introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

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