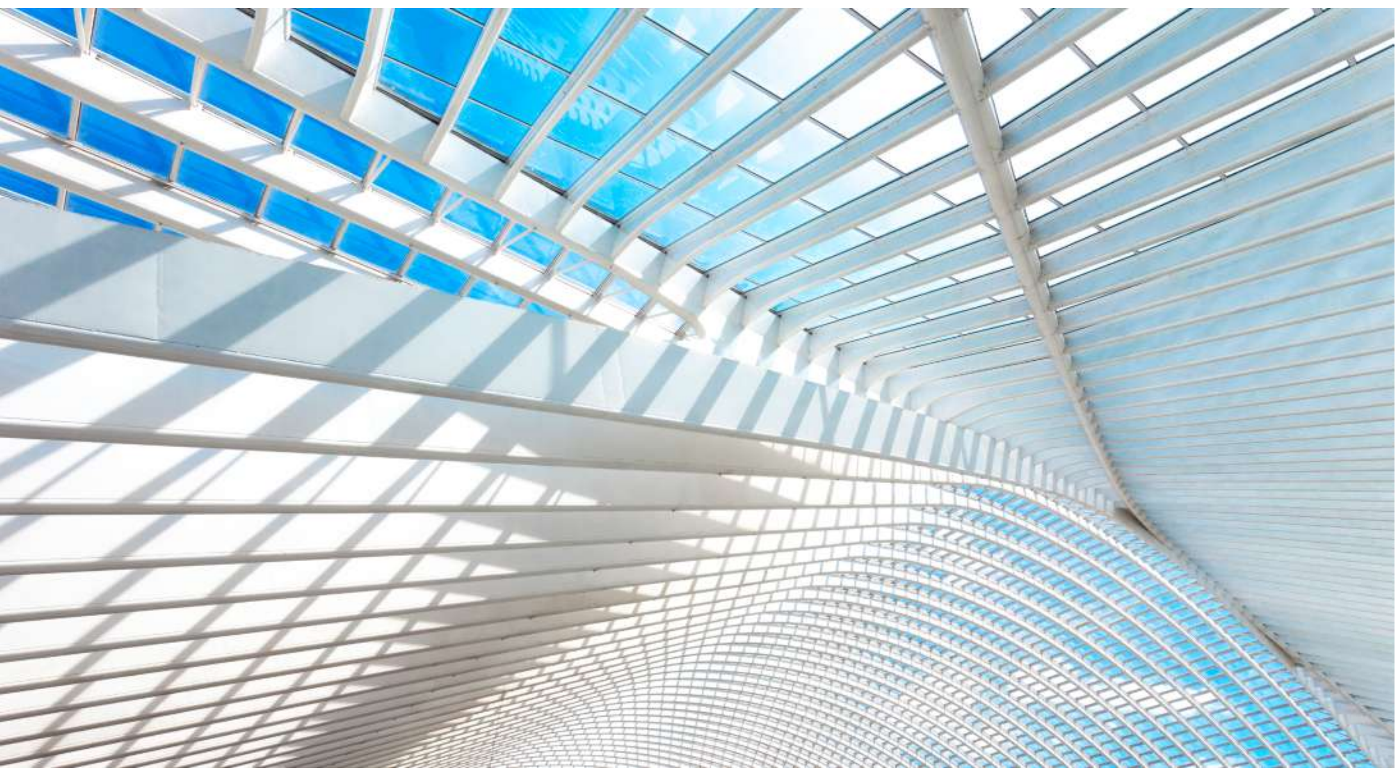
S&P U.S. Equity Momentum 40% VT 4% Decrement Index

A Dynamic, Rules-Based Approach to Managing Volatility While Tracking U.S. Equity Markets



For years, large financial institutions have used momentum signals and futures contracts to capitalize on market trends. Leveraging futures has historically allowed many institutions to enhance liquidity and increase potential upside in certain market environments. Today, innovations in indexing are democratizing access to low-cost, sophisticated futures strategies built on rules-based index platforms.

S&P Dow Jones Indices
A Division of S&P Global

The S&P U.S. Equity Momentum 40% VT 4% Decrement Index **(SPUMP40)** (hereafter referred to as the "Index") seeks to measure the performance of a long-only, trend-following strategy that allocates to E-mini S&P 500 Futures, E-mini Nasdaq 100 Futures and E-mini Russell 2000 Futures, less a decrement of 4% per year. The Index may be leveraged up to four times to achieve the 40% volatility target.

What Are the Potential Benefits of the Index?

1. Dynamic equity allocation
2. Upside potential
3. Volatility control
4. Liquidity
5. Diversification

What's Inside the Index?

The Index seeks to track a broad and diverse mix of U.S. equity futures:

E-mini S&P 500 Futures	E-mini Nasdaq 100 Futures	E-mini Russell 2000 Futures
Large-cap U.S. equities	Large-cap U.S. growth equities	Small-cap U.S. equities

How Does the Index Work?

There are three key steps used to calculate the index:

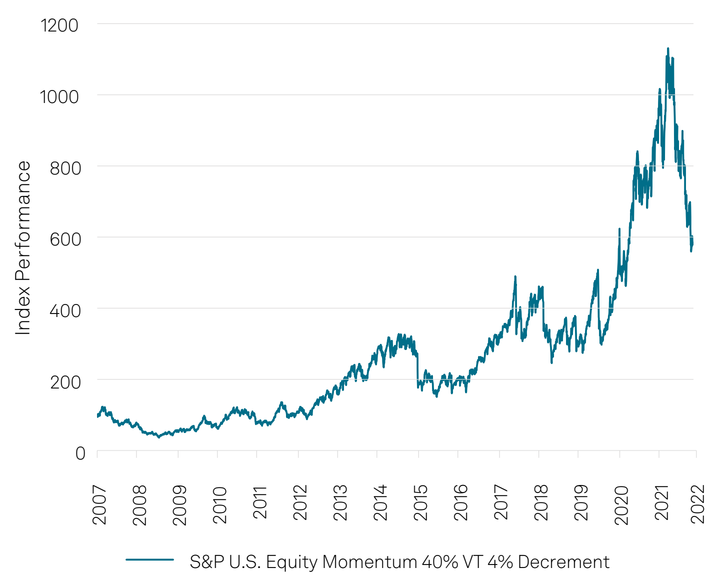
Step 1	Select the constituent U.S. equity futures using the momentum signal
Step 2	Determine the exposure to meet the 40% volatility target
Step 3	Apply a 4% decrement overlay

How Has the Index Performed?

- Since August 2007, the Index generated a 12.51% annualized return and a 0.28 Sharpe ratio.
- The long-term average exposure of the Index was 2.8x.
- The Index's back-tested maximum drawdowns were not substantially different from the benchmarks' maximum drawdowns, despite the 40% volatility target and leverage.

Exhibit 1: Historical Performance Profile of the Index (Using Excess Return)

Characteristic	S&P U.S. Equity Momentum 40% VT 4% Decrement Index
Return (Annualized, %)	
12-Month	-29.19
3-Year	20.21
5-Year	15.15
Full Period	12.51
Volatility (Annualized, %)	
Full Period	44.25
Other Characteristics	
Full-Period Sharpe Ratio	0.28
Maximum Yearly Drawdown (%)	-57.38



Source: S&P Dow Jones Indices LLC. Data from Aug. 24, 2007 to June 30, 2022. Past performance is no guarantee of future results. Index performance based on excess return in USD. The S&P U.S. Equity Momentum 40% VT 4% Decrement Index was launched March 14, 2022. All data prior to the index launch is back-tested hypothetical data. Charts and tables are provided for illustrative purposes and 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.

How Does the Momentum Signal Work?

The Index weight **shifts dynamically** between its three futures components based on a built-in **momentum signal**. On a **daily basis**, the Index **divides its allocation evenly** between the underlying index futures with the **highest risk-adjusted momentum scores**.

$$\text{The risk-adjusted momentum score} = \frac{\left(\text{Historical short-term* average price} - \text{Long-term** average price}\right)}{\text{Volatility***}}$$

*~one month; **~two months; ***~five months

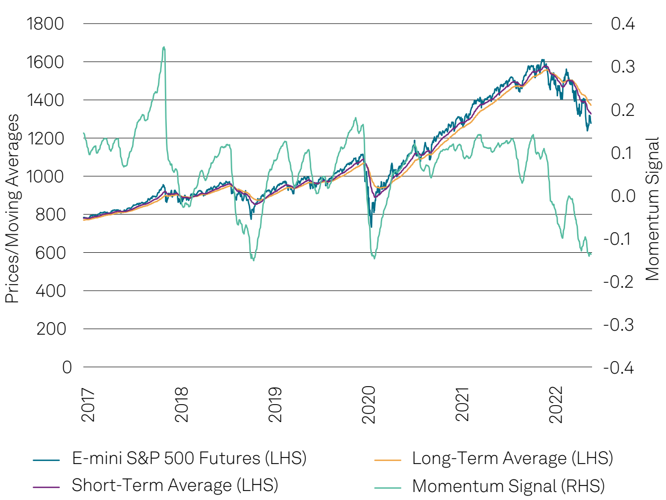
The average prices and volatility are calculated such that a larger weight is given to more recent data points. Furthermore, the risk-adjusted momentum score is updated daily to be reactive but also smoothed to avoid too frequent allocation changes.

Once the respective risk-adjusted momentum scores have been calculated, the unlevered weight to the component futures are set as follows:

If the 1^{st} and 2^{nd} constituents > 3^{rd} constituent,
1^{st} = 50%, 2^{nd} = 50%, 3^{rd} = 0%*

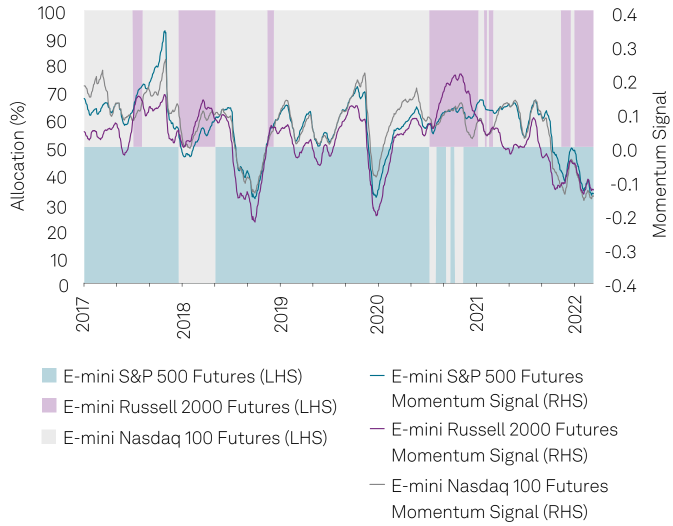
*Subject to tied outcome constraints.

Exhibit 2: The Long-Term and Short-Term Average Prices for the S&P 500 E-mini Futures and Its Overall Momentum Signal



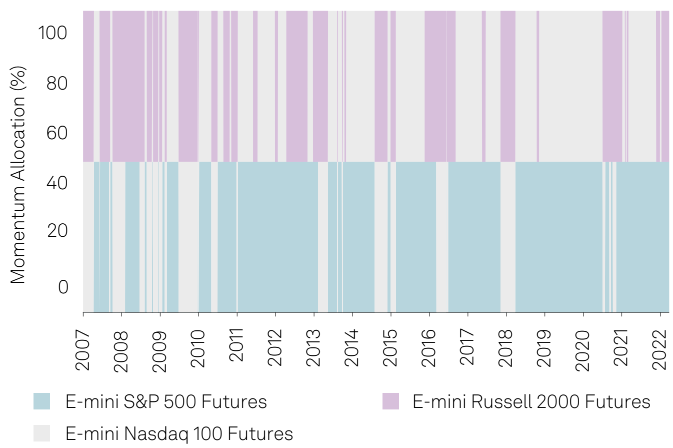
Data from March 31, 2017 to June 30, 2022.

Exhibit 3: The Momentum Signals and Allocations for Each of the Component Futures over the Past Five Years



March 31, 2017 to June 30, 2022.

Exhibit 4: The Allocations for Each of the Component Futures over the Full Simulation Period



Data from Aug. 24, 2007 to June 30, 2022.

Source: S&P Dow Jones Indices LLC. The S&P U.S. Equity Momentum 40% VT 4% Decrement Index was launched Mar. 14, 2022. All data prior to the index launch is back-tested hypothetical data. Chart is provided for illustrative purposes and reflects 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.

How Does the Decrement Work?

A decrement is an overlay applied to the S&P U.S. Equity Momentum 40% VT Index. It is constructed by periodically deducting a fixed 4% per year after leverage.

For more information on the decrement, please refer to the methodology, as well as our paper titled "A Guide to S&P Decrement Indices."

How Does the Volatility Target Work?

On a daily basis, the Index adjusts the overall exposure with the goal of achieving a 40% volatility target, subject to a 4x (400%) leverage cap. This means in a higher volatility environment, the Index will take less exposure to the underlying index futures. Conversely, as volatility falls, the Index will take more exposure to the underlying index futures (up to the maximum limit of 400%).

What Is the Exposure of the Index in Different Market Conditions?

	Realized Volatility	Futures Exposure
When volatility goes up, the index decreases its allocation to the equity futures.	50%	80%
	40%	100%
When volatility goes down, the index increases its allocation to the equity futures, up to a leveraged allocation of 400%.	20%	200%
	8%	400% (capped)

The Index has fluctuated between periods of low exposure (when volatility is high) and high exposure (when volatility is low). The long-term average exposure of the index was 2.8x, and the exposure has been capped at 4x levered at several points in time (see Exhibit 5). Over the long term, the Index had a realized volatility of 44.25% (see Exhibit 6).

Exhibit 5: Historical Volatility

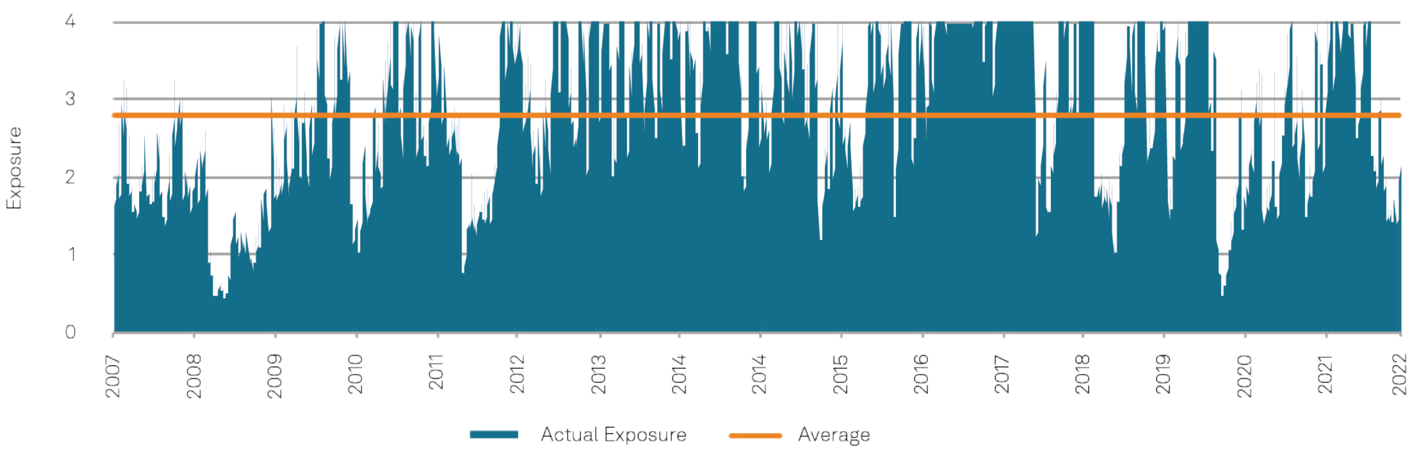
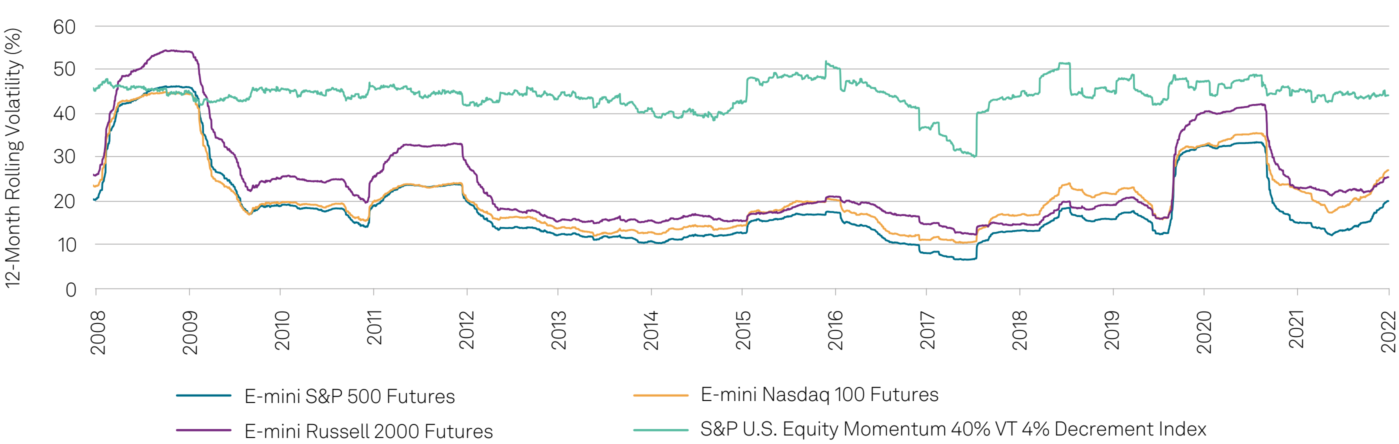
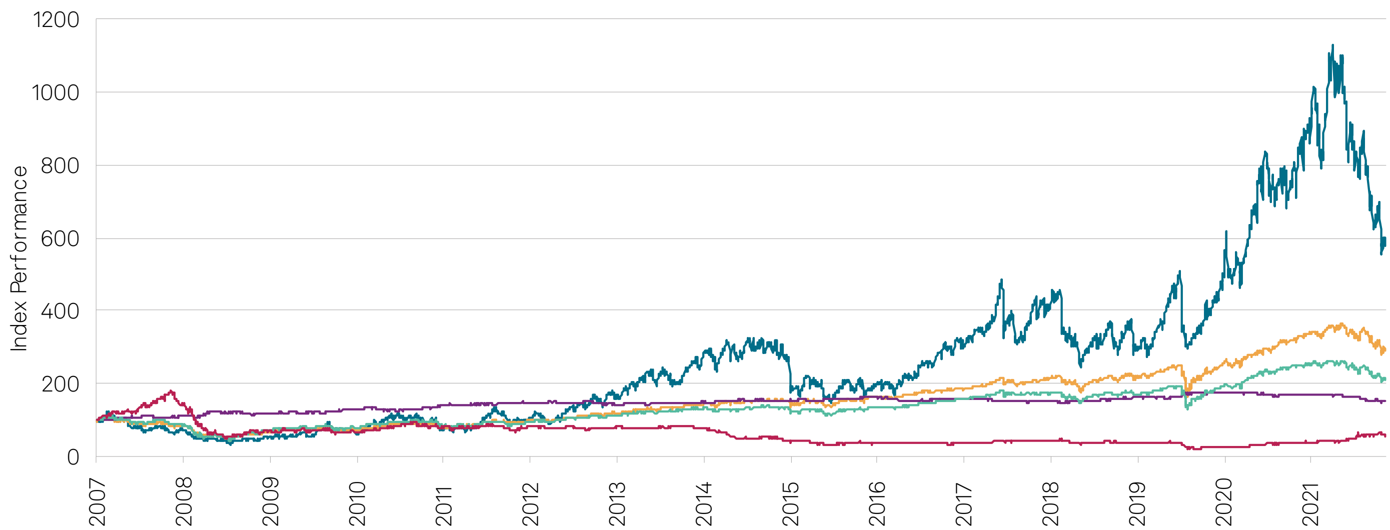


Exhibit 6: Historical 12-Month Rolling Volatility of the Component Index Futures and Overall Index



Source: S&P Dow Jones Indices LLC. Data as of June 30, 2022. The S&P U.S. Equity Momentum 40% VT 4% Decrement Index was launched March 14, 2022. All data prior to the index launch is back-tested hypothetical data. Chart is provided for illustrative purposes and reflects 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.

Exhibit 7: Historical Performance Profile of the Index and Other Benchmarks (Using Excess Return)



Characteristic	S&P U.S. Equity Momentum 40% VT 4% Decrement Index	E-mini S&P 500 Futures	S&P 10-Year U.S. Treasury Note Futures Index	S&P Global BMI	S&P GSCI
Return (Annualized, %)					
12-Month	-29.19	-11.18	-9.27	-16.75	44.51
3-Year	20.21	9.53	-1.54	5.80	14.04
5-Year	15.15	9.62	-0.38	6.25	10.46
Full Period	12.51	7.42	2.93	5.06	-3.64
Volatility (Annualized, %)					
Full Period	44.25	20.75	5.84	17.34	24.15
Other Characteristics					
Full-Period Sharpe Ratio	0.28	0.36	0.50	0.29	-0.15
Maximum Yearly Drawdown (%)	-57.38	-49.55	-8.41	-52.72	-67.75
Full-Period Correlation to S&P U.S. Equity Momentum 40% VT 4% Decrement Index	100	80	-32	71	29

Source: S&P Dow Jones Indices LLC. Data from Aug. 24, 2007 to June 30, 2022. Past performance is no guarantee of future results. Index performance based on excess return in USD. The S&P U.S. Equity Momentum 40% VT 4% Decrement Index was launched March 14, 2022. All data prior to the index launch is back-tested hypothetical data. Charts and tables are provided for illustrative purposes and 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.

Exhibit 8: Historical Performance Profile of the Index (Using Excess Return)

Period	Annualized Return (%)	Annualized Volatility (%)	Sharpe Ratio	Maximum Drawdown (%)
2008	-50.86	45.79	-1.11	-57.38
2009	23.69	42.82	0.55	-32.76
2010	66.81	44.24	1.51	-38.13
2011	-24.29	45.64	-0.53	-43.83
2012	39.44	44	0.90	-35.38
2013	117.98	41.06	2.87	-17.67
2014	23.39	40.28	0.58	-21.71
2015	-32.31	48.21	-0.67	-48.74
2016	7.31	45.49	0.16	-26.22
2017	76.21	30.62	2.49	-11.74
2018	-27.93	51.33	-0.54	-50.05
2019	54.42	41.94	1.30	-27.56
2020	65.08	47.57	1.37	-41.62
2021	57.37	44.25	1.30	-21.94
Since 2007	12.51	44.25	0.28	-71.53
7-Year Trailing	10.80	44.74	0.24	-51.20
5-Year Trailing	15.15	44.90	0.34	-50.59
3-Year Trailing	20.21	45.34	0.45	-50.59
1-Year Trailing	-29.19	43.96	-0.66	-50.59

Exhibit 9: Performance Profile of the Index versus the Three Underlying Rolling Futures

Characteristic	S&P U.S. Equity Momentum 40% VT 4% Decrement Index	E-mini S&P 500 Futures	E-mini Nasdaq 100 Futures	E-mini Russell 2000 Futures
Return (Annualized, %)				
12-Month	-29.19	-11.18	-20.92	-25.53
3-Year	20.21	9.53	14.32	3.46
5-Year	15.15	9.62	14.66	3.82
Full-Period	12.51	7.42	12.47	6.18
Volatility (Annualized, %)				
Full Period	44.25	20.75	22.79	26.26
Other Characteristics				
Full-Period Sharpe Ratio	0.28	0.36	0.55	0.24
Maximum Yearly Drawdown (%)	-57.38	-49.55	-51.20	-50.27
Full-Period Correlation to S&P U.S. Equity Momentum 40% VT 4% Decrement Index (%)	100	80	82	78

Source: S&P Dow Jones Indices LLC. Data from Aug. 24, 2007 to June 30, 2022. Past performance is no guarantee of future results. Index performance based on excess return in USD. Please refer to the S&P U.S. Equity Momentum Index Methodology for details on the roll methodology for the futures contracts. the S&P U.S. Equity Momentum 40% VT 4% Decrement Index was launched March 14, 2022. All data prior to the index launch is back-tested hypothetical data. Charts and tables are provided for illustrative purposes and 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.

Performance Disclosure/Back-Tested Data

The S&P U.S. Equity Momentum 40% VT 4% Decrement Index was launched Mar. 14, 2022. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at www.spglobal.com/spdji. Past performance of the Index is not an indication of future results. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results. Please refer to the methodology for the Index 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. Back-tested performance is for use with institutions only; not for use with retail investors.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. 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 to a fixed value for calculation purposes. The Launch Date designates the date when 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 data feed to external parties. For Dow Jones-branded indices 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.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate S&P DJI's ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption" please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used.

Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices maintains the index and calculates the index levels and performance shown or discussed but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

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At S&P Dow Jones Indices, we provide iconic and innovative index solutions backed by unparalleled expertise across the asset-class spectrum. By bringing transparency to the global capital markets, we empower investors everywhere to make decisions with conviction. We're the largest global resource for index-based concepts, data and research, and home to iconic financial market indicators, such as the S&P 500® and the Dow Jones Industrial Average®. More assets are invested in products based upon our indices than any other index provider in the world. With over USD 8.3 trillion in passively managed assets linked to our indices and over USD 8.4 trillion benchmarked to our indices, our solutions are widely considered essential in tracking market performance, evaluating portfolios and developing investment strategies.

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