

**S&P 500 Intraday
Trading Cadence
Indices
*Methodology***

October 2026

Table of Contents

Introduction	3
Index Objective and Highlights	3
Index Family	3
Supporting Documents	5
Index Construction	6
Index Calculations	6
Index Maintenance	12
Rebalancing	12
Unavailable Pricing	12
Disruption Handling	12
Currency of Calculation and Additional Index Return Series	12
Base Date and History Availability	13
Index Governance	14
Index Committee	14
Index Policy	15
Holiday Schedule	15
Unexpected Exchange Closures	15
Rebalancing	15
Recalculation Policy	15
Contact Information	15
Index Dissemination	16
Tickers	16
Index Data	16
Web site	16
Appendix A: Calculation of the Rolling Intraday Index	17
Appendix B	18
TWAP Calculation	18
TWAP Windows	18
Appendix C	20
Implied Volatility Calculation	20
Option Universe	20
Strip Construction	20

Strike Interpolation	22
Maturity Interpolation	23
Disclaimer	24

Introduction

Index Objective and Highlights

The S&P 500 Intraday Trading Cadence TCA Indices use a risk-control mechanism that dynamically rebalances based on intraday volatility. This approach uses time weighted average prices of e-mini S&P 500 futures, calculated over various time windows throughout the trading day, to determine index rebalancing. The index is designed to manage intraday realized volatility and respond more swiftly to evolving market conditions than traditional risk control indices that rebalance at the end of the day.

Index Family

Table 1

Index	Volatility Target (VolTarget)	Maximum Leverage (LevMax)	Leverage Change Floor (LevFloor)	Leverage Change Cap (LevCap)	Transaction Cost (tcost)	Carry Cost (carrycost)	Repfee	Index Family
S&P 500 Intraday Trading Cadence 5 TCA 0.75% Decrement Index (USD) ER	5%	75%	5%	3%	0.01%	0.75%	0.04%	Low
S&P 500 Intraday Trading Cadence 8 TCA 0.5% Decrement Index (USD) ER	8%	100%	7.5%	5%	0.01%	0.50%	0.04%	Base
S&P 500 Intraday Trading Cadence 10 TCA 0.85% Decrement Index (USD) ER	10%	150%	10%	6%	0.01%	0.85%	0.04%	Base
S&P 500 Intraday Trading Cadence 12 TCA 0.6% Decrement Index (USD) ER	12%	175%	12.5%	7.5%	0.01%	0.60%	0.04%	Base
S&P 500 Intraday Trading Cadence 14 TCA 0.65% Decrement Index (USD) ER	14%	200%	15%	10%	0.01%	0.65%	0.04%	Base
S&P 500 Intraday Trading Cadence 30	30%	400%	20%	15%	0.01%	1%	0.04%	Base

Index	Volatility Target (VolTarget)	Maximum Leverage (LevMax)	Leverage Change Floor (LevFloor)	Leverage Change Cap (LevCap)	Transaction Cost (tcost)	Carry Cost (carrycost)	Repfee	Index Family
TCA 1% Decrement Index (USD) ER								
S&P 500 Intraday Trading Cadence 40 TCA 6% Decrement Index (USD) ER	40%	500%	20%	20%	0.01%	6%	0.04%	High

Supporting Documents

This methodology is meant to be read in conjunction with supporting documents providing greater detail with respect to the policies, procedures and calculations described herein. References throughout the methodology direct the reader to the relevant supporting document for further information on a specific topic. The list of the main supplemental documents for this methodology and the hyperlinks to those documents is as follows:

Supporting Document	URL
S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology	Equity Indices Policies & Practices
S&P Dow Jones Indices' Index Mathematics Methodology	Index Mathematics Methodology
S&P Dow Jones Indices' Commodities Indices Policies & Practices Methodology	Commodities Indices Policies & Practices

This methodology was created by S&P Dow Jones Indices to achieve the aforementioned objective of measuring the underlying interest of each index governed by this methodology document. Any changes to or deviations from this methodology are made in the sole judgment and discretion of S&P Dow Jones Indices so that the index continues to achieve its objective.

Index Construction

Index Calculations

For each index calculation day, the index calculates multiple times using intraday calculation windows. The closing level of the index is the index level calculated at the end of the last intraday calculation window:

Index closing level (ICL^t) = Value of ITCL_h^t at the last window h on day t

where:

$ITCL_h^t$ = The intraday index level calculated at the end of calculation window h on day t

On the index initialization date, $ITCL_{last}^t = 100$. For every subsequent calculation window h , $ITCL_h^t$ calculates as:

$$ITCL_h^t = ITCL_{h-1}^t + Units_{h-1}^t \times (Eq_h^t - Eq_{h-1}^t) - carry\ cost \times \frac{Days_{h-1,h}^t}{360} \times ITCL_{h-1}^t - repfee \times \frac{Days_{h-1,h}^t}{360} \times Units_{h-1}^t \times Eq_{h-1}^t - tcost \times abs(Units_h^t - Units_{h-1}^t) \times Eq_h^t$$

where:

$Units_h^t$ = The number of target units calculated for day t and intraday window h for underlying Equity Index

W_h^t = The equity participation level calculated at the end of calculation window h on day t

Eq_h^t = The equity intraday level calculated at the end of calculation window h as defined in Appendix A

$Days_{h-1,h}^t$ = The number of calendar days between the date associated with calculation window $h-1$ and calculation window h

$tcost$ = Transaction cost value, as defined in Table 1

$carry\ cost$ = carry cost value, as defined in Table 1

$repfee$ = replication fee value, as defined in Table 1

On the index initialization date, the equity participation level calculates as:

$$Units_{last}^t = \frac{W_{last}^t \times ITCL_{last}^t}{Eq_{last}^t}$$

$$W_{last}^t = \min(LevMax, \frac{VolTarget}{EqVol_{last-1}^t})$$

For every subsequent calculation window, h ,

$$Units_h^t = \frac{W_h^t \times ITCL_{h-1}^t}{Eq_{h-1}^t}$$

$$W_h^t = \max(W_{h-1}^t - LevFloor, \min(TargetWt_h^t, W_{h-1}^t + LevCap))$$

where:

$TargetWt_h^t$	= The target equity participation level for window h on day t calculated at the end of calculation window $h-1$ on day t , or the last window on day $t-1$ if this is the first window of the day t
$EqVol_{last-1}^t$	= The volatility of the equity intraday level calculated at the end of the penultimate calculation window on day t
$Vol Target$	= The target volatility level, as defined in <i>Table 1</i>
$LevMax$	= The maximum allowed leverage, as defined in <i>Table 1</i>
$LevFloor$	= The maximum amount by which the current participation value can be below the previous participation value, as defined in <i>Table 1</i>
$LevCap$	= The maximum amount by which the current participation value can be above the previous participation value, as defined in <i>Table 1</i>

The target equity participation level calculates as follows:

If the index belongs to the family of base indices according to *Table 1*:

$$TargetWt_h^t = \min \left[LevMax, \left(\frac{VolTarget}{EqVol_{h-1}^t} \times (1 + rounding(ExpAdj_{h-1}^t)) \times VAF_h^t \times EqAdj_h^t \times (1 + skewAdj^{t-1} \times \left(\frac{1}{VRF} - 1 \right)) \right) \right]$$

If the index belongs to the family of low target index according to *Table 1*:

$$TargetWt_h^t = \min \left[LevMax, \left(\frac{VolTarget}{EqVol_{h-1}^t} \times (1 + rounding(ExpAdj_{h-1}^t)) \times VAF_h^t \times EqAdj_h^t \right) \right]$$

If the index belongs to the family of high target index according to *Table 1*:

$$TargetWt_h^t = \min \left[LevMax, \left(\frac{VolTarget}{EqVol_{h-1}^t} \times VAF_h^t \times (1 + skewAdj^{t-1} \times \left(\frac{1}{VRF} - 1 \right)) \right) \right]$$

where:

$ExpAdj_h^t$ = The exposure adjustment calculated at the end of calculation window h on day t , as defined in:

$EqVol_h^t$ = The volatility of the equity intraday level calculated at the end of calculation window h on day t , as defined in

VAF_h^t = The volatility adjustment factor calculated at the end of calculation window h on day t ,

$EqAdj_h^t$ = The most recent equity adjustment available at the end of calculation window h on day t :

$$EqAdj_h^t = \begin{cases} EqAdj^t & \text{if } h \text{ is the last window of day } t \\ EqAdj^{t-1} & \text{if } h \text{ is any window before the last window of day } t \end{cases}$$

$skewAdj^t$ = Skew adjustment calculated on day t

VRF = Volatility Reduction Factor, a constant set at 80%

$rounding()$ = A function that will round the value to 2 decimal places

On the index initialization date, the volatility of the equity intraday level calculates for the past 296 trading windows as:

$$EqVol_{last-1}^t = \sqrt{\frac{252 \times NbW}{296} \times \sum_{past\ 296} \left[\ln \left(\frac{Eq_h^t}{Eq_{h-1}^t} \right) \right]^2}$$

For every subsequent calculation window h :

$$EqVol_h^t = \max(EqVol_{h,short}^t, EqVol_{h,long}^t)$$

$$EqVol_{h,short}^t = \sqrt{\alpha_{short} \times (EqVol_{h-1,short}^t)^2 + (1 - \alpha_{short}) \times 252 \times NbW \times \ln \left(\frac{Eq_h^t}{Eq_{h-1}^t} \right)^2}$$

$$EqVol_{h,long}^t = \sqrt{\alpha_{long} \times (EqVol_{h-1,long}^t)^2 + (1 - \alpha_{long}) \times 252 \times NbW \times \ln \left(\frac{Eq_h^t}{Eq_{h-1}^t} \right)^2}$$

$$\alpha_{short} = 1 - \frac{\ln(2)}{Daily\ Half\ Life, Short \times NbW}$$

$$\alpha_{long} = 1 - \frac{\ln(2)}{Daily\ Half\ Life, Long \times NbW}$$

where:

Daily Half Life, Short = A constant set at 1.65 (days)

Daily Half Life, Long = A constant set at 3.3 (days)

NbW = A set number of windows per day, here 13

On the index initialization date, the volatility adjustment factor is set to $VAF_{last}^t = 1$. For the next 120 index calculation days, $VAF_h^t = 1$ for all calculation windows h . Subsequently, the volatility adjustment factor calculates as follows:

$$VAF_h^t = \min(Intraday\ VAF_h^t, Daily\ VAF^t)$$

$$Intraday\ VAF_h^t = \min \left(VAF\ Cap, \max \left[VAF\ Floor, \left(\sqrt{\max \left(0, 2 - \left[\frac{Intraday\ Vol_{h-1}^t}{VolTarget} \right]^2} \right)^{Gain}} \right] \right)$$

$$Daily\ VAF_h^t = \min \left(VAF\ Cap, \max \left[VAF\ Floor, \left(\sqrt{\max \left(0, 2 - \left[\frac{Daily\ Vol_{t-1}}{VolTarget} \right]^2} \right)^{Gain}} \right] \right)$$

$$Intraday\ Vol_{h-1}^t = \sqrt{252 \times NbW} \times stdev(past\ 273\ values\ of\ Return(ITCL_{h-1}^t))$$

$$Daily\ Vol_{t-1} = \sqrt{252} \times stdev(past\ 120\ values\ of\ Return(ICL_{t-1}^t))$$

where:

Gain = A constant set at 1.5

VAF Cap = A constant set at 1.2

VAF Floor = A constant set at 0.7, if the index belongs to low or high target index family the constant is set at 0.8.

Return(ITCL_{h-1}^t) = The intraday log return of intraday index level from calculation window h-1 to calculation window h

Return(ICL_{t-1}^t) = The daily log return of the index closing level from day t-1 to day t

stdev() = A function that calculates standard deviation using the "n-1" method

The target equity participation level of the index adjusts based on a trend overlay based on the equity intraday level, Eq_h^t . On each index calculation day t , the index calculates the exposure adjustment based using the last value of the equity intraday level for the previous day, Eq_{last}^{t-1} .

From the index initialization window to the next 130 index calculation windows for which $Mod_Ret_h^t$ is defined, the exposure adjustment factor is set to $ExpAdj_h^t = 0$. Subsequently, the exposure adjustment factor calculates as follows:

$$ExpAdj_h^t = \begin{cases} 0 & \text{if calculation window } h \text{ is the last two windows of the day} \\ N(norm_up_ret_h^t) + N(norm_down_ret_h^t) - 1 & \text{otherwise} \end{cases}$$

where:

$N(x)$ = The standard normal cumulative distribution function.

$norm_down_ret_h^t$ = The normalized-down return, defined as:

$$norm_down_ret_h^t = \frac{\ln\left(\frac{Eq_h^t}{Eq_{last}^{t-1} * 0.98}\right)}{10d_int_mod_vol_h^t \times \sqrt{MTE_{h+1}^t}}$$

$norm_up_ret_h^t$ is the normalized-up return, defined as:

$$norm_up_ret_h^t = \frac{\ln\left(\frac{Eq_h^t}{Eq_{last}^{t-1} * 1.02}\right)}{10d_int_mod_vol_h^t \times \sqrt{MTE_{h+1}^t}}$$

where:

$$MTE_h^t = \frac{\text{number of minutes from end - time of window } h \text{ to end of trading day } t}{60 \times 24 \times 252}$$

$$10d_int_mod_vol_h^t = \sqrt{\frac{252}{10} \times \sum_{j=0}^{129} \left(Mod_Ret_{h-j} - \frac{\sum_{k=0}^{129} Mod_Ret_{h-k}}{130} \right)^2}$$

where:

$$Mod_Ret_h^t = \begin{cases} \ln\left(\frac{Eq_h^t}{Eq_{h-1}^t}\right) & \text{if } h \text{ is not the first window of the day} \\ \text{sign}(overnight_return^t) * \sqrt{\frac{1}{10} * \sum_{i=0}^9 (overnight_return^{t-i})^2} & \text{if } h \text{ is the first window of the day} \end{cases}$$

where:

$$overnight_return^t = \ln\left(\frac{Eq_{h=first\ window\ of\ the\ day\ t}^t}{Eq_{h=last\ window\ of\ the\ day\ t-1}^{t-1}}\right)$$

The equity adjustment for the index is based on momentum and volatility signals daily constructed using the second to last window values of the equity intraday levels for day t . The signal calculates as follows:

$$EqAdj^t = \begin{cases} 0 & \text{if } EqMomSig_t < 0 \text{ and } EqVolSig_t < 0 \\ 1 & \text{otherwise} \end{cases}$$

where:

$EqMomSig_t$ = The equity momentum signal value for day t

$EqVolSig_t$ = The equity volatility signal value for day t

The equity momentum signal value calculates as:

$$EqMomSig_t = \begin{cases} -1 & \text{if } \sum_{i=1}^4 sign(MA_{0,t} - MA_{i,t}) < 0 \\ +1 & \text{otherwise} \end{cases}$$

$$MA_{0,t} = MovAvg(5D, t)$$

$$MA_{1,t} = MovAvg(20D, t)$$

$$MA_{2,t} = MovAvg(60D, t)$$

$$MA_{3,t} = MovAvg(126D, t)$$

$$MA_{4,t} = MovAvg(252D, t)$$

$$MovAvg(nD, t) = \frac{1}{n} \times \sum_{j=0}^{n-1} Eq_{last}^{t-j}$$

where:

$$Eq_{last}^{t-j} = \text{the second to last equity intraday level as of day } t - j$$

$$sign(x) = \begin{cases} +1 & \text{if } x > 0 \\ 0 & \text{if } x = 0 \\ -1 & \text{if } x < 0 \end{cases}$$

The equity volatility signal value calculates as:

$$EqVolSig_t = \begin{cases} -1 & \text{if } RV_t > (RVAvg_t + \sigma RV_t) \\ +1 & \text{otherwise} \end{cases}$$

where:

$$RV_t = \sqrt{\frac{1}{5} \times \sum_{j=0}^4 \left[\ln \left(\frac{Eq_{last}^{t-j}}{Eq_{last}^{t-j-1}} \right) \right]^2 \times 252}$$

$$RVAvg_t = \frac{1}{20} \times \sum_{j=0}^{19} RV_{t-j}$$

$$\sigma RV_t = \sqrt{\frac{1}{251} \times \sum_{j=0}^{251} \left(RV_{t-j} - \frac{\sum_{k=0}^{251} RV_{t-k}}{252} \right)^2}$$

The skew adjustment feature estimates the skew using actual option market to reduce the volatility estimate during stresses and capture the rebounds more efficiently.

$$skewAdj^t = \begin{cases} 1 & \text{if } \sum_{i=t-9}^t tailcov^i > 1 \text{ and } t \geq 10 \\ 0 & \text{otherwise} \end{cases}$$

where:

$$tailcov^t = \begin{cases} 1 & \text{if } cov_{implied}^t < rollingcov^t - cov_{threshold} \\ 0 & \text{otherwise} \end{cases}$$

where:

On the index initialization date, the $rollingcov^t$ of the equity intraday level calculates for the past 126 trading windows as:

$$rollingcov^t = \frac{\sum_{i=t}^{t-126} cov_{implied}^i}{126}$$

On any other calculation day t , the six-month exponential weighted moving average calculates as follows:

$$rollingcov^t = 0.9945 \times rollingcov^{t-1} + (1 - 0.9945) \times cov_{implied}^i$$

where:

$$cov_{threshold} = 0.15$$

$$cov_{implied}^t = \Delta_{SPXspot}^t \times \Delta_{SPXvol}^t$$

$$\Delta_{SPXspot}^t = \frac{\sigma_{ATM}^t(SPX^t, t, T_{mat}) \times SPX^t}{\sqrt{252}}$$

$$\Delta_{SPXvol}^t = \frac{(\sigma_{OTM}^t(K_{put}^t, t, T_{mat}) - \sigma_{OTM}^t(K_{call}^t, t, T_{mat}))}{(K_{put}^t - K_{call}^t)} \times \Delta_{SPXspot}^t$$

where:

$$K_{put}^t = \frac{SPX^t}{e^{N^{-1}(1-abs(PutDelta)) \times \frac{VIX^t}{100} \times \sqrt{\frac{T_{mat}}{252}} - 0.5 \times \frac{T_{mat}}{252} \times \left(\frac{VIX^t}{100}\right)^2}}$$

$$K_{call}^t = \frac{SPX^t}{e^{N^{-1}(CallDelta) \times \frac{VIX^t}{100} \times \sqrt{\frac{T_{mat}}{252}} - 0.5 \times \frac{T_{mat}}{252} \times \left(\frac{VIX^t}{100}\right)^2}}$$

$$K_{atm}^t = SPX^t$$

T_{mat} = The time to maturity, set to 63 days

$PutDelta$ = The Put delta, fixed at -0.15.

$CallDelta$ = The Call delta, fixed at 0.40.

SPX_t = The SPX Index level rounded to the second decimal.

VIX_t = The VIX Index level.

For more detailed information on calculating $\sigma_{ATM}^t(SPX^t, t, T_{mat})$, $\sigma_{OTM}^t(K_{put}^t, t, T_{mat})$ and $\sigma_{OTM}^t(K_{call}^t, t, T_{mat})$, please refer to *Appendix C*.

Index Maintenance

Rebalancing

The index rebalances intraday at the end of each TWAP calculation window and a final time after the close of the business day.

For any unscheduled full-day market closure, an intraday closure prior to the end of the last TWAP observation window, or other disruption event affecting TWAP calculation, the rebalancing occurs on the next business day when all necessary data is available.

Unavailable Pricing

When an index uses TWAP pricing, and there is at least one price observed in the relevant TWAP observation window, the index uses that price, as defined in *Index Construction*.

Disruption Handling

If each minute within the relevant TWAP window contains at least one valid price, this window is not considered disrupted.

If there are no recorded prices during the relevant TWAP window, this window is considered fully disrupted, meaning the index skips that window's rebalancing with no change in units from the previous window.

If one or more minutes (but fewer than 10) does not contain a valid price, this window is considered disrupted and the number of units is adjusted by the Executed Size. The Executed Size calculates as the number of minutes with at least one valid price divided by the total number of minutes in the TWAP window,

The number of units held at the end of the TWAP window calculates as:

$$Adjusted_Units_h^t = Units_{h-1}^t + (Units_h^t - Units_{h-1}^t) * \frac{\text{number of minutes with at least 1 valid price}}{10}$$

Currency of Calculation and Additional Index Return Series

In addition to the indices detailed in this methodology, additional return series versions of the indices may be available, including, but not limited to: currency, currency hedged, decrement, fair value, inverse, leveraged, and risk control versions. For a list of available indices, please refer to [S&P DJI Methodology & Regulatory Status Database](#).

For information on the calculation of different types of indices, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

For the inputs necessary to calculate certain types of indices, including decrement, dynamic hedged, fair value, and risk control indices, please refer to the Parameters documents available at www.spglobal.com/spdji/.

Base Date and History Availability

The index history availability, base dates, and base values are shown in the table below.

Index	Launch Date	First Value Date	Base Date	Base Value
S&P 500 Intraday Trading Cadence 5 TCA 0.75% Decrement Index (USD) ER	10/23/2026	02/21/2007	02/21/2007	100
S&P 500 Intraday Trading Cadence 8 TCA 0.5% Decrement Index (USD) ER	10/23/2026	02/21/2007	02/21/2007	100
S&P 500 Intraday Trading Cadence 10 TCA 0.85% Decrement Index (USD) ER	10/23/2026	02/21/2007	02/21/2007	100
S&P 500 Intraday Trading Cadence 12 TCA 0.6% Decrement Index (USD) ER	10/23/2026	02/21/2007	02/21/2007	100
S&P 500 Intraday Trading Cadence 14 TCA 0.65% Decrement Index (USD) ER	10/23/2026	02/21/2007	02/21/2007	100
S&P 500 Intraday Trading Cadence 30 TCA 1% Decrement Index (USD) ER	10/23/2026	02/21/2007	02/21/2007	100
S&P 500 Intraday Trading Cadence 40 TCA 6% Decrement Index (USD) ER	10/23/2026	02/21/2007	02/21/2007	100

Index Governance

Index Committee

An Index Committee maintains the indices. All committee members are full-time professionals at S&P Dow Jones Indices. Meetings are held regularly. The Index Committee oversees the management of the indices, including determinations of intra-rebalancing changes, maintenance and inclusion policies, and other matters affecting the maintenance and calculation of the indices.

In fulfilling its responsibilities, the Index Committee has full and complete discretion to (i) amend, apply, or exempt the application of index rules and policies as circumstances may require and (ii) add, remove, or by-pass any bond in determining the composition of an index.

The Index Committee may rely on any information or documentation submitted to it or gathered by it that the Index Committee believes to be accurate. The Index Committee reserves the right to reinterpret publicly available information and to make changes to the indices based on a new interpretation of that information at its sole discretion. All Index Committee discussions are confidential.

The Index Committee is separate from and independent of other analytical groups at S&P Global. In particular, the Index Committee has no access to or influence on decisions by S&P Global Ratings analysts.

S&P Dow Jones Indices' Index Committees reserve the right to make exceptions when applying the methodology if the need arises. In any scenario where the treatment differs from the general rules stated in this document or supplemental documents, clients will receive sufficient notice, whenever possible. In addition to the daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews the methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In certain instances, S&P Dow Jones Indices may publish a consultation inviting comments from external parties.

For more information on index governance policies, please refer [here](#).

Index Policy

Holiday Schedule

The index is calculated on all U.S. equity market business days.

A complete holiday schedule for the year is available at www.spglobal.com/spdji/.

Unexpected Exchange Closures

For information on Unexpected Exchange Closures, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Rebalancing

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on or around the scheduled rebalancing date. Any such change will be announced with proper advance notice where possible.

Recalculation Policy

For information on the recalculation policy, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

For information on Calculations and Pricing Disruptions, Expert Judgment and Data Hierarchy, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Contact Information

For questions regarding an index, please contact: index_services@spglobal.com.

Index Dissemination

Index levels are available through S&P Dow Jones Indices' Web site at www.spglobal.com/spdji/, major quote vendors (see codes below), numerous investment-oriented Web sites, and various print and electronic media.

Tickers

The table below lists headline indices covered by this document. All versions of the below indices that may exist are also covered by this document. Please refer to [S&P DJI Methodology & Regulatory Status Database](#) for a complete list of indices covered by this document.

Index	BBG	RIC
S&P 500 Intraday Trading Cadence 5 TCA 0.75% Decrement Index (USD) ER	SPITC5D	.SPITC5D
S&P 500 Intraday Trading Cadence 8 TCA 0.5% Decrement Index (USD) ER	SPITC8D	.SPITC8D
S&P 500 Intraday Trading Cadence 10 TCA 0.85% Decrement Index (USD) ER	SPITC10D	.SPITC10D
S&P 500 Intraday Trading Cadence 12 TCA 0.6% Decrement Index (USD) ER	SPITC12D	.SPITC12D
S&P 500 Intraday Trading Cadence 14 TCA 0.65% Decrement Index (USD) ER	SPITC14D	.SPITC14D
S&P 500 Intraday Trading Cadence 30 TCA 1% Decrement Index (USD) ER	SPITC30D	.SPITC30D
S&P 500 Intraday Trading Cadence 40 TCA 6% Decrement Index (USD) ER	SPITC40D	.SPITC40D

Index Data

Daily constituent and index level data are available via subscription.

For product information, please contact S&P Dow Jones Indices, www.spglobal.com/spdji/en/contact-us.

Web site

For further information, please refer to S&P Dow Jones Indices' Web site at www.spglobal.com/spdji/.

Appendix A: Calculation of the Rolling Intraday Index

The rolling futures index, Fut_h^t is calculated as follows:

$$A = \begin{cases} 1000 & \text{if day } t \text{ and window } h \text{ represent the first calculation day and window respectively} \\ \frac{FutPx_{h,1s}^t}{FutPx_{h-1,1s}^t} \times Fut_{h-1}^t & \text{if day } t \text{ is not a futures contract roll day} \\ \left(\frac{FutPx_{h,1s}^t}{FutPx_{h-1,1s}^t} - 2 \times tcost \right) \times Fut_{h-1}^t & \text{if day } t \text{ is a futures contract roll day and window } h \text{ is the third last window of the day} \\ \left(\frac{NewFutPx_{h,1s}^t}{NewFutPx_{h-1,1s}^t} \right) \times Fut_{h-1}^t & \text{if day } t \text{ is a futures contract roll day and window } h \text{ is the last or the second last window of the day} \end{cases}$$

where:

$$FutPx_{h,1s}^t = TWAP(E - \text{mini S\&P Futures Current Contract last} - \text{price}, t, StartTime_h, EndTime_h, 1s)$$

$$NewFutPx_{h,1s}^t = TWAP(E - \text{mini S\&P Futures Next Contract last} - \text{price}, t, StartTime_h, EndTime_h, 1s)$$

The roll day for the futures contract is the calculation day eight business days before the future expiry date.

Appendix B

TWAP Calculation

Given an intraday time window defined by a window start time and a window end time, and a set number of fixed intervals throughout the trading day, to calculate an asset's TWAP first group the tick level pricing data as follows:

- The time window is defined as beginning at (and including) the start time and ending at (and including) the end time.
- The time window is then split into k intervals depending on the provided interval length parameter.

For example, assuming a time window start time of 09:49:59 and an end time of 09:59:58, with the interval = 1 seconds, there will be k = 600, where k = the number of 1-second intervals starting at each second from 09:49:59 to 09:59:58 included.

- To determine the asset price for each interval, use the **Last** available traded asset price in that interval. The TWAP of window h on day t with interval k for the asset calculates as follows:

$$TWAP(\text{Asset}, t, \text{StartTime}_h, \text{EndTime}_h, \text{interval}) = \frac{\sum_k (\delta_{h,k}^t \times \text{Last Asset Price}_{h,k}^t)}{\sum_k \delta_{h,k}^t}$$

where:

$$\delta_{t,h}^k = \begin{cases} 1 & \text{if Last Asset Price}_{h,k}^t \text{ exists} \\ 0 & \text{otherwise} \end{cases}$$

TWAP Windows

For each scheduled full trading day, the TWAP calculation windows are defined as follows:

Window ID	Start Time	End Time	Interval	Time zone
1	09:49:59	09:59:58	1 sec	EST
2	10:19:59	10:29:58	1 sec	EST
3	10:49:59	10:59:58	1 sec	EST
4	11:19:59	11:29:58	1 sec	EST
5	11:49:59	11:59:58	1 sec	EST
6	12:19:59	12:29:58	1 sec	EST
7	12:49:59	12:59:58	1 sec	EST
8	13:19:59	13:29:58	1 sec	EST
9	13:49:59	13:59:58	1 sec	EST
10	14:19:59	14:29:58	1 sec	EST
11	14:49:59	14:59:58	1 sec	EST
12	15:19:59	15:29:58	1 sec	EST
13	15:49:59	15:59:58	1 sec	EST

For each scheduled early market closure day, the TWAP calculation windows are defined as follows:

Window ID	Start Time	End Time	Interval	Time zone
1	09:49:59	09:59:58	1 sec	EST
2	10:19:59	10:29:58	1 sec	EST

Window ID	Start Time	End Time	Interval	Time zone
3	10:49:59	10:59:58	1 sec	EST
4	11:19:59	11:29:58	1 sec	EST
5	11:49:59	11:59:58	1 sec	EST
6	12:19:59	12:29:58	1 sec	EST
7	12:49:59	12:59:58	1 sec	EST

Appendix C

Implied Volatility Calculation

This appendix describes the construction of the implied volatility inputs used in the skew adjustment calculation defined in the Index Construction section. For each index calculation day t , implied volatility estimates at the three target strikes (K_{atm}^t , K_{put}^t , K_{call}^t) and target maturity ($t_{mat} = 63$ calendar days) are derived from end-of-day SPX index option bid/ask quotes.

Option Universe

For each index calculation day t , only standard monthly SPX index options are used. A standard monthly SPX option is defined as a contract satisfying both of the following conditions:

- The contract is AM-settled (SPX series); and
- The expiry date is the holiday-adjusted third Friday of the expiry month, defined as the third Friday of the calendar month, or if that date is a NYSE holiday, the nearest prior NYSE trading day.

Strip Construction

For interpolation to the target maturity of 63 days, two surrounding maturities are selected:

$t_{low,t}$ = The nearest available maturity less than or equal to the target maturity,

$t_{high,t}$ = The nearest available maturity greater than or equal to the target maturity.

The maturity is selected according to the following rules:

- If maturities exist both below and above the target maturity, $t_{low,t}$ is the closest maturity below or equal to the target, and $t_{high,t}$ is the closest maturity above or equal to the target.
- If a maturity exists at target maturity, $t_{low,t} = t_{high,t}$ and maturity interpolation is not performed.

For each of the two bracketing expiry legs ($t_{low,t}$ and $t_{high,t}$), the following steps apply:

1. Option mid-price:

The mid-price of each option calculates as follows:

$$Mid = \frac{(Bid + Ask)}{2}$$

2. ATMF strike selection:

The at-the-money-forward strike is the strike that minimizes the absolute difference between the call mid-price and the put mid-price, over all strikes for which both a call and a put quote exist for the same expiry and calculates as follows:

$$K_{atmf} = \arg \min_K |call_K^{mid} - put_K^{mid}|$$

where:

$call_K^{mid}$ = The call mid price at stike K

put_K^{mid} = The call mid price at stike K

3. Forward Price:

The put-call-parity forward for each expiry leg calculates as follows:

$$F = K_{atmf} + e^{rT_c} (call_{atmf}^{mid} - put_{atmf}^{mid})$$

where:

r = The US Federal Funds Effective Rate, expressed as a decimal

T_c = The number of calendar days from day t to the expiry date, divided by 365

$call_{atmf}^{mid}$ = The call mid price at stike K_{atmf}

put_{atmf}^{mid} = The call mid price at stike K_{atmf}

4. OTM filter:

Only out-of-the-money options are retained for each expiry leg:

- Call options with Strike > F; and
- Put options with Strike < F; and

5. Implied volatility solution:

The implied volatility of each remaining option is solved by Newton-Raphson inversion of the forward Black-76 pricing model. The Black-76 price calculates as:

$$\begin{aligned} Price(F, K, T_c, r, \sigma) &= e^{-rT_c} \times [F \times N(d_1) - K \times N(d_2)] && \text{for a call option} \\ Price(F, K, T_c, r, \sigma) &= e^{-rT_c} \times [K \times N(-d_2) - F \times N(-d_1)] && \text{for a put option} \end{aligned}$$

where:

$$d_1 = \frac{[\ln F/K + 0.5 \times \sigma^2 \times T_c]}{\sigma \times \sqrt{T_c}}$$

$$d_2 = d_1 - \sigma \times \sqrt{T_c}$$

$N(\cdot)$ = The cumulative standard normal distribution function

The Black-76 vega calculates as:

$$Vega(F, K, T_c, r, \sigma) = e^{-rT_c} \times F \times \sqrt{T_c} \times N'(d_1)$$

where:

$N'(\cdot)$ = The standard normal probability density function

The Newton-Raphson update at each iteration n , calculates as:

$$\sigma_{n+1} = \sigma_n - \frac{[Price(F, K, T_c, r, \sigma_n) - Mid]}{Vega(F, K, T_c, r, \sigma_n)}$$

Each step is subject to the following constraints before being applied:

- The absolute value of the step does not exceed 0.25; and
- The absolute value of the step does not exceed 100% of the current value of σ_n

The solver parameters are defined as follows:

Parameter	Value
Initial volatility guess	$\min(\max(0.2 \times F/K, 0.001), 5.0)$
Volatility lower bound	0.1%
Volatility upper bound	500%
Convergence tolerance	$ Price(\sigma_n) - Mid < 0.000001$
Maximum iterations	1000

The solver is considered converged when the absolute difference between the model price and the option mid-price is less than 0.000001. If convergence is not achieved within 1,000 iterations, the best value of volatility reached is retained. An option is assigned no implied volatility (excluded from the strip) if its mid-price is non-positive, its time-to-expiry is non-positive, or its vega becomes non-finite or less than 1×10^{-8} during the solve.

Under the forward Black-76 model, a call and a put at the same strike and expiry return identical implied volatilities when solved on the same put-call-parity forward F . The resulting OTM strip for each expiry leg therefore forms a single continuous implied volatility curve as a function of strike. No rounding is applied to individual option implied volatilities at this stage.

Strike Interpolation

For each target strike ($K_{atm}^t, K_{put}^t, K_{call}^t$) and each expiry leg, the implied volatility at the target strike is obtained by linear interpolation between the two OTM strip strikes that bracket the target:

$$\sigma(K^*) = (1 - w) \times \sigma(K_{low}^*) + w \times \sigma(K_{high}^*)$$

where:

$$w = \frac{(K^* - K_{low}^*)}{(K_{high}^* - K_{low}^*)}$$

K_{low}^* = The nearest available strike in the OTM strip at or below the target strike K^*

K_{high}^* = The nearest available strike in the OTM strip at or above the target strike K^*

If the target strike falls below the lowest available strike in the strip, the implied volatility of the lowest available strike is used. If the target strike falls above the highest available strike, the implied volatility of the highest available strike is used.

The three strikes are read from the strip as follows:

- K_{call}^t is interpolated on the call side of the strip (call options with Strike > F only)
- K_{put}^t is interpolated on the put side of the strip (call options with Strike < F only)
- $K_{atm}^t = SPX^t$ is interpolated over the combined call-and-put strip. Under the forward Black-76 model, calls and puts at a shared strike return the same implied volatility, so the combined strip

forms a single continuous curve and the read at the spot level is unambiguous. The ATM implied volatility is evaluated at the spot level SPX^t .

The outputs of the strike interpolation step are six implied volatility values, representing each target strike evaluated at the low and high expiry legs respectively:

$$\{\sigma_t^{low}(K_{call}^t, t_{low}), \sigma_t^{high}(K_{call}^t, t_{high}), \sigma_t^{low}(K_{put}^t, t_{low}), \sigma_t^{high}(K_{put}^t, t_{high}), \sigma_t^{low}(K_{atm}^t, t_{low}), \sigma_t^{high}(K_{atm}^t, t_{high})\}$$

Maturity Interpolation

The six implied volatility values produced by the strike interpolation step are combined in pairs, per target strike, using the maturity interpolation formula to produce three final 63-calendar-day implied volatilities $\sigma_t(K_{atm}^t, t, t_{mat})$, $\sigma_t(K_{call}^t, t, t_{mat})$, and $\sigma_t(K_{put}^t, t, t_{mat})$:

$$\sigma_t(K^t, t, t_{mat}) = \sqrt{\min(1, \frac{t_{high} - t_{mat}}{t_{high} - t_{low}}) \times (\sigma_t^{low}(K^t, t_{low}))^2 + \max(0, \frac{t_{mat} - t_{low}}{t_{high} - t_{low}}) \times (\sigma_t^{high}(K^t, t_{high}))^2}$$

All maturity values (t_{low} , t_{high} , t_{mat}) are expressed in calendar days throughout and Final volatilities values are rounded to the fourth decimal.

Disclaimer

Performance Disclosure/Back-Tested Data

Where applicable, S&P Dow Jones Indices and its index-related affiliates (“S&P DJI”) defines various dates to assist our clients by 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 DJI 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.

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.

Information presented prior to an index’s launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the 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. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Also, the treatment of corporate actions in back-tested performance may differ from treatment for live indices due to limitations in replicating index management decisions. 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.

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 certain 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 DJI maintains the index and calculates the index levels and performance shown or discussed but does not manage any 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).

Intellectual Property Notices/Disclaimer

© 2026 S&P Dow Jones Indices. All rights reserved. S&P, S&P 500, SPX, SPY, The 500, US500, US 30, S&P 100, S&P COMPOSITE 1500, S&P 400, S&P MIDCAP 400, S&P 600, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, Select Sector, S&P MAESTRO, S&P PRISM, S&P STRIDE, GICS, SPIVA, SPDR, INDEXOLOGY, iTraxx, iBoxx, ABX, ADBI, CDX, CMBX, MBX, MCDX, PRIMEX, HHPI, and SOVX are registered trademarks of S&P Global, Inc. ("S&P Global") or its affiliates. DOW JONES, DJIA, THE DOW and DOW JONES INDUSTRIAL AVERAGE are trademarks of Dow Jones Trademark Holdings LLC ("Dow Jones"). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P DJI does not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P DJI is impersonal and not tailored to the needs of any person, entity, or group of persons. S&P DJI receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P DJI does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P DJI makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P DJI is not an investment advisor, commodity trading advisor, fiduciary, "promoter" (as defined in the Investment Company Act of 1940, as amended) or "expert" as enumerated within 15 U.S.C. § 77k(a), and S&P DJI makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. S&P DJI is not a tax advisor. Inclusion of a security, commodity, crypto currency, or other asset within an index is not a recommendation by S&P DJI to buy, sell, or hold such security, commodity, crypto currency, or other asset, nor is it considered to be investment or trading advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof ("Content") may be modified, reverse engineered, reproduced, or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P DJI. The Content shall not be used for any unlawful or unauthorized purposes. S&P DJI and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness, or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" "WHERE IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIMS ANY AND ALL

EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special, or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related information and other analyses, including ratings, research and valuations are generally provided by licensors and/or affiliates of S&P Dow Jones Indices, including but not limited to S&P Global's other divisions such as S&P Global Market Intelligence. Any credit-related information and other related analyses and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. Any opinion, analyses and rating acknowledgement decisions are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P Dow Jones Indices does not assume any obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P DJI does not act as a fiduciary or an investment advisor. While S&P DJI has obtained information from sources it believes to be reliable, S&P DJI does not perform an audit or undertake independent verification of any information it receives. S&P DJI reserves the right to vary or discontinue any index at any time for regulatory or other reasons. Various factors, including external factors beyond S&P DJI's control might necessitate material changes to indices.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P Global Ratings reserves the right to assign, withdraw or suspend such acknowledgement at any time and in its sole discretion. S&P Dow Jones Indices, including S&P Global Ratings, disclaim any duty whatsoever arising out of the assignment, withdrawal, or suspension of an acknowledgement as well as any liability for any damage alleged to have been suffered on account thereof. Affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, may receive compensation for its ratings and certain credit-related analyses, normally from issuers or underwriters of securities or from obligors. Such affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, reserve the right to disseminate its opinions and analyses. Public ratings and analyses from S&P Global Ratings are made available on its Web sites, www.standardandpoors.com (free of charge), and www.ratingsdirect.com and www.globalcreditportal.com (subscription), and may be distributed through other means, including via S&P Global Ratings publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.

S&P Global keeps certain activities of its various divisions and business units separate from each other to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions, and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate, or otherwise address.

Some indices use the Global Industry Classification Standard (GICS®), which was developed by, and is the exclusive property and a trademark of, S&P Global and MSCI. Neither MSCI, S&P DJI nor any other party involved in making or compiling any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use

thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability, or fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P DJI, any of their affiliates or any third party involved in making or compiling any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

S&P Dow Jones Indices products are governed by the terms and conditions of the agreements under which they may be provided. A license is required from S&P Dow Jones Indices to display, create derivative works of and/or distribute any product or service that uses, is based upon and/or refers to any S&P Dow Jones Indices and/or index data.

The Content may have been created with the assistance of an artificial intelligence (AI) tool. While the AI tool may provide suggestions and insights, the final Content was composed, reviewed, edited, and approved by a human(s) at S&P Dow Jones Indices. As such, S&P DJI claims full copyright ownership of this AI-assisted Content, in accordance with applicable laws and regulations.

ESG Indices Disclaimer

S&P DJI provides indices that seek to select, exclude, and/or weight index constituents based on, but not limited to, certain environmental, social or governance (ESG) indicators, or a combination of those indicators, including the following: environmental indicators (including the efficient use of natural resources, the production of waste, greenhouse gas emissions, or impact on biodiversity); social indicators (such as, inequality and investment in human capital); governance indicators (such as sound management structures, employee relations, remuneration of staff, tax compliance, respect for human rights, anti-corruption and anti-bribery matters), specific sustainability or values-related company involvement indicators (for example, production/distribution of controversial weapons, tobacco products, or thermal coal), or controversies monitoring (including research of media outlets to identify companies involved in ESG-related incidents).

S&P DJI ESG indices use ESG metrics and scores in the selection and/or weighting of index constituents. ESG scores or ratings seek to measure or evaluate a company's, or an asset's, performance with respect to environmental, social and corporate governance issues.

The ESG scores, ratings, and other data used in S&P DJI ESG indices is supplied directly or indirectly by third parties (note these parties can be independent affiliates of S&P Global or unaffiliated entities) so an S&P DJI ESG index's ability to reflect ESG factors depends on these third parties' data accuracy and availability.

ESG scores, ratings, and other data may be reported (meaning that the data is provided as disclosed by companies, or an asset, or as made publicly available), modelled (meaning that the data is derived using a proprietary modelling process with only proxies used in the creation of the data), or reported and modelled (meaning that the data is either a mix of reported and modelled data or is derived from the vendor using reported data /information in a proprietary scoring or determination process).

ESG scores, ratings, and other data, whether from an external and/or internal source, is based on a qualitative and judgmental assessment, especially in the absence of well-defined market standards, and due to the existence of multiple approaches and methodologies to assess ESG factors and considerations. An element of subjectivity and discretion is therefore inherent in any ESG score, rating, or other data and different ESG scoring, rating, and/or data sources may use different ESG assessment or estimation methodologies. Different persons (including ESG data ratings, or scoring providers, index administrators or users) may arrive at different conclusions regarding the sustainability or impact of a particular company, asset, or index.

Where an index uses ESG scores, ratings or other data supplied directly or indirectly by third parties, S&P DJI does not accept responsibility for the accuracy or completeness of such ESG scores, ratings, or data. No single clear, definitive test or framework (legal, regulatory, or otherwise) exists to determine 'ESG',

'sustainable', 'good governance', 'no adverse environmental, social and/or other impacts', or other equivalently labelled objectives. In the absence of well-defined market standards and due to the existence of multitude approaches, the exercise of judgment is necessary. Accordingly, different persons may classify the same investment, product and/or strategy differently regarding 'ESG', 'sustainable', 'good governance', 'no adverse environmental, social and/or other impacts', or other equivalently labelled objectives. Furthermore, the legal and/or market position on what constitutes an 'ESG', 'sustainable', 'good governance', 'no adverse environmental, social and/or other impacts', or other equivalently labelled objectives may change over time, especially as further regulatory or industry rules and guidance are issued and the ESG sustainable finance framework becomes more sophisticated.

Prospective users of an S&P DJI ESG Index are encouraged to read the relevant index methodology and related disclosures carefully to determine whether the index is suitable for their potential use case or investment objective.