

tpSEF Inc.

101 Hudson Street
Jersey City
NJ 07302
USA

tel +1 201 557 5000

fax +1 201 557 5995

web www.tullettprebon.com

December 9, 2022

Submitted via CFTC Portal

Mr. Christopher J. Kirkpatrick
Office of the Secretariat
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, N.W.
Washington, D.C. 20581

Re: *tpSEF Inc. – Regulation 40.2 of Certification of Equity Index Swaps - NASDAQ US Rising Dividend Achievers Index TR, Nasdaq Riskalyze US Large Cap, NASDAQ Technology Dividend TR, DJ InternetCompTr (tpSEF Submission #22-29P)*

Dear Mr. Kirkpatrick:

tpSEF Inc. (“tpSEF”) hereby notifies the Commodity Futures Trading Commission (the “Commission”) of its intent to list Equity Index Swaps -_NASDAQ US Rising Dividend Achievers Index TR, Nasdaq Riskalyze US Large Cap, NASDAQ Technology Dividend TR, DJ InternetCompTr_(the “Contracts”) on tpSEF’s swap execution facility. tpSEF intends to list the Contracts on December 13, 2022.

Pursuant to Commission Regulation 40.2, this submission includes:

- i. The intended listing date – December 9, 2022;
- ii. A certification by tpSEF that: (a) the Contracts comply with the Commodity Exchange Act, as amended, and the Commission regulations thereunder; and (b) concurrent with this submission, tpSEF posted on its website: (i) a notice of pending certification of the Contracts, and (ii) a copy of this submission, attached as Exhibit A;
- iii. The terms and conditions of the Contracts, attached as Exhibit B; and
- iv. An explanation and analysis of the Contracts compliance with applicable core principles and Commission regulations, attached as Exhibit C.

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tpSEF is listing the Contracts by virtue of updating the terms and conditions of Equity Index Swaps originally submitted to the Commission for self-certification pursuant to Commission Regulation 40.2 on October 8, 2013 and last updated April 26, 2022. A copy of the terms and conditions marked to show changes from the version submitted on April 26, 2022 is attached as Exhibit D.

Questions regarding this submission should be directed to Brian Donnelly, Chief Compliance Officer, at (201) 984-6956 or by email at bddonnelly@tullettprebon.com.

Very truly yours,

tpSEF Inc.


By: _____

Name: Brian D. Donnelly

Title: Chief Compliance Officer

Date: December 9, 2022

Enclosures

cc: CFTC Division of Market Oversight (dmosubmissions@cftc.gov)
Nancy Markowitz, CFTC (nmarkowitz@cftc.gov)

EXHIBIT A

CERTIFICATIONS PURSUANT TO SECTION 5c OF THE COMMODITY EXCHANGE
ACT, 7 U.S.C. §7A-2 AND COMMODITY FUTURES TRADING COMMISSION
REGULATION 40.2, 17 C.F.R. §40.2

tpSEF Inc. (“tpSEF”) hereby certifies that: (i) Equity Index Swaps - NASDAQ US Rising Dividend Achievers Index TR, Nasdaq Riskalyze US Large Cap, NASDAQ Technology Dividend TR, DJ InternetCompTr (the “Contracts”) comply with the Commodity Exchange Act, 7 U.S.C. §1 et seq. and Commodity Futures Trading Commission (“Commission”) regulations thereunder; and (ii) concurrent with this submission, tpSEF posted on its website: (a) a notice of pending certification of the Contract with the Commission and (b) a copy of this submission.

tpSEF Inc.



By: _____

Name: Brian D. Donnelly

Title: Chief Compliance Officer

Date: December 9, 2022

EXHIBIT B

**Equity Index Swaps
 Terms and Conditions**

Summary:	This covers equity index swaps (each, an “Equity Index Swap”).
Limitations on Available Selections and Default Settings:	<p>The terms under which an Equity Index Swap may be traded are shown below or in the attached tables.</p> <p>For amounts or rates, the relevant term cannot be less than the specified Minimum, must represent an even Increment and cannot exceed the Maximum; for a date, the date cannot be earlier than Earliest nor later than Latest.</p> <p>For Business Days, the defaults shall be the locations specified for the relevant currency, any additional locations specified for the relevant Floating Rate Options.</p> <p>The parties may add additional locations from the Available Locations and may eliminate some or all of the other locations, so long as there is at least one location in which payment may be made.</p> <p>For these purposes “TARGET” is considered a location.</p> <p>In many cases there are normal “vanilla” terms on which the parties will transact. These are shown as “Default ” and will apply unless the parties vary them.</p> <p>It should be noted that these contracts can be traded in a variety of currencies. Since each national market has its own peculiarities, the “Available Terms” and/or “Default Terms” may vary by currency.</p> <p>In some cases, the same contract might have different terms depending on the market in which it is traded (<i>e.g.</i>, London versus NY). In that case the default settings may vary by market.</p>
Incorporated Standards:	<p>This contract description incorporates by reference the following industry standard documentation and standards:</p> <ul style="list-style-type: none"> (a) 2006 ISDA Definitions (b) 2002 ISDA Equity Derivatives Definitions (“Equity Definitions”) (c) Annex IS to 2009 Americas Master Equity Derivatives Confirmation, to 2007 European Master Equity Derivatives Confirmation Agreement (for EMEA indices, as indicated on the Equity Index Available Indices attached) or to Second Revised 2005 AEJ Interdealer Master Equity Derivatives Confirmation Agreement (for AEJ indices, as indicated on the Equity

	Index Available Indices attached) (d) the Revised ISDA AEJ Reference Price Source Matrix (June 25, 2009, or as updated effective prior to the Trade Date) (“AEJ Source”) For convenience, certain terms are mapped to their FpML 5.5 equivalent.
Product Type/ISDA OTC Taxonomy:	
ISDA OTC Asset Class:	Equity
ISDA OTC Base Product:	Swap
ISDA OTC Sub-Product:	Price Return Basic Performance
ISDA OTC Transaction type:	Single Index
Further Limitations:	None
Terms:	
Trade Date:	As agreed by the parties.
Strike Date:	For a Forward Starting Transaction, as agreed by the parties (only for EMEA Indices).
Forward Starting:	As per Annex IS (only for EMEA Indices).
Notional Amount (“notional”):	An amount in one of the Available Currencies (see below) agreed by the parties.
Effective Date (“effectiveDate”):	(i) The date specified by the parties, adjusted in accordance with any applicable Business Day Convention, or (ii) in the case of AEJ Indices, per Annex IS.
Effective Date Business Days:	As specified by the parties from among the Available Business Days (except for AEJ Indices).
Effective Date Business Day Convention:	As specified by the parties from among the Available Business Day Conventions (except for AEJ Indices).
Termination Date (“terminationDate”):	Per Annex IS, unless otherwise specified by the parties.
Index:	As specified by the parties from among the Available Indices.
Number of Index Units:	As specified by the parties or, if not so specified, determined by Annex IS (except for AEJ Indices).
Index Unit:	Per Annex IS (except for AEJ Indices and EMEA Indices).
Exchange(s):	(i) Per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as specified by the parties.
Multiple Exchange Index Annex/Component Security Index Annex:	Per Annex IS (EMEA Indices only).
Related Exchanges:	(i) Per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as specified by the parties.
Hedging Party:	(i) As specified by the parties, or (ii) in the case of AEJ Indices, per Annex IS.
Determining Party:	(i) As specified by the parties, or (ii) in the case of AEJ Indices, per Annex IS.
Equity Amounts:	
Equity Amount Payer (“payerPartyReference”):	As specified by the parties.
Equity Notional Amount:	As specified by the parties.
Equity Notional Reset:	As per Annex IS.
Type of Return:	(i) As specified by the parties, or (ii) in the case of AEJ Indices, per Annex IS unless specified by the parties.
Initial Price Election:	As specified by the parties (in the case of an EMEA

	Index only).
Initial Price:	As specified by the parties and (other than in the case of AEJ Indices) adjusted in accordance with Annex IS.
Final Price Election:	As specified by the parties (in the case of an EMEA Index only).
Final Price:	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as specified by the parties or, if not so specified, per the Equity Definitions.
Valuation Time:	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as specified by the parties or, if not so specified, per the Equity Definitions.
Valuation Dates:	As specified by the parties.
Averaging Dates:	In the case of AEJ Indices, as and if specified by the parties.
Floating Amount:	
Floating Rate Payer (“payerPartyReference”):	As specified by the parties.
Notional Amount (“notionalAmount”):	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as specified by the parties or, if not so specified, per the Equity Definitions.
Payment Dates:	As per Annex IS, unless otherwise specified by the parties.
Initial Floating Rate:	As specified by the parties.
Floating Rate Option (“floatingRateIndex”):	As specified by the parties.
Designated Maturity (“indexTenor”):	As specified by the parties.
Linear Interpolation:	For the Calculation Periods specified by the parties to the extent permitted by Annex IS.
Shorter Designated Maturity for Linear Interpolation:	For a Calculation Period to which Linear Interpolation applies, as specified by the parties.
Longer Designated Maturity for Linear Interpolation:	For a Calculation Period to which Linear Interpolation applies, as specified by the parties.
Spread:	As specified by the parties.
Day Count Fraction:	As specified by the parties.
Reset Dates (“resetDate”):	As per Annex IS.
Payment Dates Business Days:	As per Annex IS.
Business Days (Other Than Payment Dates):	As specified by the parties.
Business Day Convention (Other Than Payment Dates):	As per Annex IS, unless otherwise specified by the parties.
Compounding:	As specified by the parties (EMEA Indices only).
Compounding Dates:	As specified by the parties if Compounding is applicable (EMEA Indices only).
Futures Price Valuation:	
Futures Price Valuation:	(i) As per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as specified by the parties or, if not so specified, per the Equity Definitions.
Exchange-traded Contract:	As specified in the Transaction Supplement.
Adjustment to Section 6.8 of the Equity Definitions:	As per Annex IS (other than in the case of AEJ Indices).
Settlement Terms:	
Cash Settlement:	As per Annex IS.
Settlement Currency:	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties.
FX Rate:	As agreed by the parties or as specified by the parties from among the Available FX Rates.

Dividends:	
Dividend Payment Date(s):	If type of return is “Total Return” (i) as per Annex IS unless otherwise agreed by the parties, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Dividend Period:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Dividend Amount:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Relevant Dividend:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Reinvestment of Dividends:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties.
Dividend Recovery:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Declared Cash Dividend Percentage:	If type of return is “Total Return” (i) as per Annex IS unless otherwise agreed by the parties, (ii) in the case of AEJ Indices, as and if agreed by the parties, or (iii) in the case of EMEA Indices, as agreed by the parties.
Declared Cash Equivalent Dividend Percentage:	If type of return is “Total Return” (i) as per Annex IS unless otherwise agreed by the parties, or (ii) in the case of AEJ Indices, as and if agreed by the parties.
Index Adjustment Events:	
Index Cancellation:	As per Annex IS.
Index Modification:	As per Annex IS.
Index Disruption:	As per Annex IS.
Additional Disruption Events:	
Change in Law:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as per Annex IS unless otherwise agreed by the parties.
Insolvency Filing:	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Hedging Disruption:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as per Annex IS (as applicable to the relevant country of underlier) unless otherwise agreed by the parties.
Increased Cost of Hedging:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definition.
Consequences of Hedging Disruption:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definition.
Loss of Stock Borrow:	(i) As per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definition.

Increased Cost of Stock Borrow:	(i) As per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definition.
Cancellation Amount:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definition.
Non-Reliance:	As per Annex IS.
Agreements and Acknowledgements Regarding Hedging Activities:	As per Annex IS.
Additional Acknowledgements:	As per Annex IS.
Index Disclaimer:	As per Annex IS.
Optional Early Termination:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, inapplicable.
Break Funding Recovery:	If Optional Early Termination is applicable, as specified by the parties.
Break Fee:	As specified by the parties in the case of EMEA Indices.
Calculation Agent:	(i) As agreed by the parties, or (ii) in the case of AEJ Indices, per Annex IS unless otherwise agreed by the parties.

Equity Index Available Currencies and Required Business Days

Three Letter Currency Code (ISDA/ISO)	Currency Name (ISDA)	Basic Business Day Locations For Currency (FpML Codes)
AUD	Australian Dollar	AUSY
CAD	Canadian Dollar	CATO
EUR	Euro	EUTA
GBP	Sterling	GBLO
HKD	Hong Kong Dollar	HKHK
JPY	Japanese Yen	JPTO
KRW	Korean Won	KRSE
SEK	Swedish Krona	SEST
USD	United States Dollars	USNY

Equity Index Available Business Day Conventions

ISDA Name
Following
Modified/Modified Following
No Adjustment
Preceding
FRN Convention/Eurodollar Convention

Equity Index Available Indices

Abbr	Name
0000AR	S&P/TSX Composite Total Return Index
AEX	AEX Index (EMEA)
AMZX	Alerian MLP Index Total Return
AMZIXVWAP	Alerian MLP Infrastructure Index Total Return VWAP
AS51	S&P/ASX 200 (AEJ)

BEL20	BEL20 Index (EMEA)
CAC	Cotation Assistée en Continu 40 (EMEA)
DAX	Deutscher Aktien Index (EMEA)
DJINETT	DJ InternetCompTr
DJITR	Dow Jones Industrial Average Total Return
DJUSRE	Dow Jones U.S. Real Estate Index
EWTRGSPC	REUTERS – REU - S&P EW 500 INDEX
FTSEMIB	FTSE MIB Index (EMEA)
GCUDCA	MSCI Daily TR Gross Small Cap Canada USD
GCUDUS	MSCI Daily Total Return Gross Small Cap USA USD
GDDLCA	MSCI Canada Index CAD Total Return (Gross Dividends)
GDDUCA	MSCI Canada Index USD Daily Total Return (Gross Dividends)
GDDUEAFE	MSCI EAFE Index Total Return (Gross Dividends)
GDDUNA	MSCI North American Index USD Total Return (Gross Dividends)
GDDUUS	MSCI US Index Total Return (Gross Dividends)
HSCEI	Hang Seng China Enterprises Index (AEJ)
HSI	Hang Seng Index (AEJ)
IBEX	IBEX 35 Index(EMEA)
IBOV	BOVESPA Index
IXBTR	S&P 500 Material Select Sector Total Return
IXCPR	Communication Services Select Sector Index
IXCTR	Communication Services Select Sector Index TR
IXETR	S&P 500 Energy Select Sector Total Return
IXITR	S&P 500 Industrials Select Sector Total Return
IXMTR	S&P 500 Financials Select Sector Total Return
IXRTR	S&P 500 Consumer Staples Select Sector Total Return
IXTTR	S&P 500 Technology Select Sector Total Return
IXUTR	S&P 500 Utilities Select Sector Total Return
IXVTR	S&P 500 Health Care Select Sector Total Return
IXYTR	S&P 500 Consumer Discretionary Select Sector Total Return
KOSPI	Korea Composite Stock Price Index (AEJ)
M1CNA	MSCI China A Inclusion USD Index (Net)
M8CA0EN	MSCI Canada Energy Gross Return Index
M8CA0FN	MSCI Canada Financials Gross Return Index
MEXBOL	Mexican IPC Index (Indice de Precios y Cotizaciones)
MSLUELAN	MSCI Emerging Markets Latin America Small Cap Index (USD) (Net Dividends)
NDDLCA	MSCI Canada Index CAD Total Return (Net Dividends)
NDDUEAFE	MSCI EAFE Net Total Return USD Index
NDDUNA	MSCI North American Index USD Total Return (Net Dividends)
NDDUUS	MSCI US Index Total Return (Net Dividends)
NDDUJN	MSCI Japan Index Total Return (Net Dividends)
NDEUMXF	MSCI Mexico Index USD Total Return (Net Dividends)
NDEUSCH	MSCI Chile Index Total Return (Net Dividends)
NDEUSCO	MSCI Colombia Index Total Return (Net Dividends)
NDEUSPR	MSCI Peru Index Total Return (Net Dividends)
NDUEBRA	MSCI Brazil Index USD Total Return (Net Dividends)
NDUEEGFL	MSCI Emerging Markets Latin America USD
NDX	NASDAQ-100
NKY	Nikkei 225 Index (AEJ)
NQCAPST	Capital Strength Total Return Index
NQCAPSTT	The Capital Strength Index
NQDVRI	NASDAQ US Rising Dividend Achievers Index TR

NQRSKLT	Nasdaq Riskalyze US Large Cap
NQ96DVUX	NASDAQ Technology Dividend TR
OEXT	S&P 100 Total Return
OMX	OMX Stockholm 30 (EMEA)
RGUSFL	Russell 1000 Financial
RU10GRTR	Russell 1000 Growth Total Return
RU10INTR	Russell 1000 Total Return
RU10VATR	Russell 1000 Value Total Return
RU20GRTR	Russell 2000 Growth Total Return
RU20INTR	Russell 2000 Total Return
RU20VATR	Russell 2000 Value Total Return
RUMCGRTR	Russell Midcap Growth Index Total Return
SOLCABTR	Solactive Canada Bank TR Index
SP5LVIT	S&P 500 Low Volatility Total Return Index
SPDAUDT	S&P 500 Dividend Aristocrats Total Return Index
SPSIBITR	S&P Biotechnology Select Industry Total Return Index
SPSIOP	S&P Oil & Gas Exploration & Production Select Industry Index
SPTRCOND	S&P 500 Consumer Discretionary Sector Total Return Index
SPTRCONS	S&P 500 Consumer Staples Sector Total Return Index
SPTRENRS	S&P 500 Energy Sector Total Return Index
SPTRFINL	S&P 500 Financials Sector Total Return Index
SPTRHLTH	S&P 500 Health Care Sector Total Return Index
SPTRINDU	S&P 500 Industrials Sector Total Return Index
SPTRINFT	S&P 500 Information Technology Sector Total Return Index
SPTRMATR	S&P 500 Materials Sector Total Return Index
SPTRMDCP	S&P MidCap 400 Total Return
SPTRRLST	S&P 500 Real Estate Sector Total Return Index
SPTRSMCP	S&P SmallCap 600 Total Return
SPTRSVX	S&P 500 Value Total Return Index
SPTRUTIL	S&P 500 Utilities Sector Total Return Index
SPXT	S&P 500 Total Return
STBANKXR	S&P/TSX Composite Banks GICS Level Industry Group Total Return Index
STCHEMR	S&P/TSX Composite Index Chemicals GICS Industry Total Return
STDBNKR	S&P/TSX Diversified Banks Total Return Index
STELUTXR	S&P/TSX Composite Index Electric Utilities GICS Industry Total Return Index
STENRS	S&P/TSX Composite Energy Sector GICS Level 1 Index
STENRSR	S&P/TSX Composite Energy Index Total Return Swap
STFINLR	S&P/TSX Composite Financials GICS Level Sector Total Return Index
STINSUR	S&P/TSX Composite Insurance GICS Industry Group Total Return Index
STLIFER	S&P/TSX Composite Life & Health Insurance Total Return Index
STMATR	S&P/TSX Composite Materials GICS Level Sector Total Return Index
STOGSTR	S&P/TSX Oil & Gas Sector Total Return Index
STOGSTR	S&P/TSX Oil & Gas Storage Total Return Index
STOILPR	S&P/TSX Composite Oil & Gas Exploration Total Return Index
STMEDAR	S&P/TSX Composite Media GICS Industry Group Total Return Index
STMUTIXR	S&P/TSX Multiple Utilities & Energy Power Total Return Index
STREITSR	S&P/TSX REIT Total Return Index
STTELSR	S&P/TSX Composite Telecom Services GICS Level Sector Total Return Index
STTELSXR	S&P/TSX Composite Telecom Services GSI Total Return Index
STUTILR	S&P/TSX Composite Utilities GICS Level Sector Total Return Index
SX5E	Eurostoxx 50 Index (EMEA)
TSX69	S&P/TSX 60 Index

TX60AR	S&P/TSX 60 Total Return Index
TTENAR	S&P/TSX Capped Energy Total Return Index
TTUTAR	S&P/TSX Capped Utilities Total Return Index
UKX	FTSE 100 Index (EMEA)
XNDX	NASDAQ-100 Total Return
XSOX	PHLX Semiconductor Sector Index Total Return

Equity Index Available FX Rates

Currency Pair	Available FX Rates
KRW/USD	BB: The rate implied by sourcing the Index on Bloomberg via "KOSPI>USD>GO" ISDA: The rate determined in accordance with the AEJ Source

Equity Index Available Day Count Fractions

ISDA Name
1/1
30/360, 360/360, Bond Basis
Actual/360
Actual/365 (Fixed), Act/365 (Fixed), A/365 (Fixed), A/365F
Actual/Actual, Actual/Actual (ISDA), Act/Act, Act/Act (ISDA)
Actual/Actual (ICMA), Act/Act, Act/Act (ICMA)

Equity Index Earliest and Latest Effective and Termination Dates

Currency	Earliest Effective Date	Latest Effective Date	Earliest Termination Date	Latest Termination Date
N/A	N/A	N/A	N/A	N/A

Equity Index Notional Amounts

Currency	Minimum	Increment	Maximum	Default
USD	10,000,000	1,000,000	N/A	N/A

Equity Index Floating Rate Options and Defaults

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
AUD-AONIA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
AUD-AONIA-OIS-COMPOUND-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-AUBBSW	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-BBSW	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-BBSW-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-BBSY (BID)	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-ISDC	All quoted tenors	N/A	Per ISDA 2006	N
AUD-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	N
AUD-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
AUD-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Quarterly Swap Rate-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Quarterly Swap Rate-ICAP-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Semi-annual Swap Rate-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Semi-Annual Swap Rate-ICAP-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Swap Rate-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-CDOR	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-CDOR-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-ISDD	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
CAD-CORRA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
CAD-ISDA-Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
CAD-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
CAD-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
CAD-LIBOR-BBA-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
CAD-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
CAD-REPO-CORRA	All quoted tenors	N/A	Per ISDA 2006	N
CAD-TBILL-ISDD	All quoted tenors	N/A	Per ISDA 2006	N
CAD-TBILL-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
CAD-TBILL-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
CAD-TBILL-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-10:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-10:00-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-10:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-10:00-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-11:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-11:00-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
EUR-Annual Swap Rate-11:00-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-3 Month	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-3 Month-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-AVERAGE	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-10:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-10:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-COMPOUND-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-Swap-Index	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Act/365	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Act/365-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Telorate	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURONIA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
EUR-ISDA-EURIBOR Swap Rate-11:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-ISDA-EURIBOR Swap Rate-12:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-ISDA-LIBOR Swap Rate-10:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-ISDA-LIBOR Swap Rate-11:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	N
EUR-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
EUR-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TAM-CDC	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC10-CNO	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC10-CNO-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC10-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC5-CNO	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC5-CNO-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC5-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
EUR-TMM-CDC-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
GBP USD-Basis Swaps-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
GBP-ISDA-Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
GBP-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	N
GBP-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
GBP-LIBOR-ISDA	All quoted tenors	N/A	Per ISDA 2006	N
GBP-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
GBP-Semi-Annual Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
GBP-Semi-Annual Swap Rate-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
GBP-Semi-Annual Swap Rate-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
GBP-SONIA-OIS-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
GBP-WMBA-RONIA-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
GBP-WMBA-SONIA-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIBOR-ATHIBOR	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIBOR-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIMID-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIMID-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-HIBOR-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-HIBOR=	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-HKAB	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-HKAB-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-ISDC	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HONIX-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
HKD-ISDA-Swap Rate-11:00	All quoted tenors	N/A	Per ISDA 2006	N
HKD-ISDA-Swap Rate-4:00	All quoted tenors	N/A	Per ISDA 2006	N
HKD-Quarterly-Annual Swap Rate-11:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
HKD-Quarterly-Annual Swap Rate-4:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
HKD-Quarterly-Annual Swap Rate-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
JPY-BBSF-Bloomberg-10:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-BBSF-Bloomberg-15:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-ISDA-Swap Rate-10:00	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
JPY-ISDA-Swap Rate-15:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-LIBOR-FRASET	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-LIBOR-ISDA	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-MUTANCALL-TONAR	All quoted tenors	N/A	Per ISDA 2006	N
JPY-OIS-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-17096	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-17097	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM (10 Banks)	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM (5 Banks)	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM (All Banks)	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM (All Banks)-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-ZTIBOR	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TONA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Reuters-10:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Reuters-15:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Telerate-10:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Telerate-15:00	All quoted tenors	N/A	Per ISDA 2006	N
KRW-CD-3220	All quoted tenors	N/A	Per ISDA 2006	N
KRW-CD-KSDA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
KRW-Quarterly Annual Swap Rate-3:30-ICAP	3M	N/A	Per ISDA 2006	N
KRW-Bond-3222	3M	N/A	Per ISDA 2006	N
SEK-Annual Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
SEK-Annual Swap Rate-SESWFI	All quoted tenors	N/A	Per ISDA 2006	N
SEK-SIOR-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
SEK-STIBOR-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
SEK-STIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
SEK-STIBOR-SIDE	All quoted tenors	N/A	Per ISDA 2006	N
SEK-Annual Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
USD-Annual Swap Rate-11:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
USD-BA-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-BA-Reference Dealers	All quoted tenors	N/A	Per ISDA 2006	N
USD-BMA Municipal Swap Index	All quoted tenors	N/A	Per ISDA 2006	N
USD-CD-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-CD-Reference Dealers	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMS-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMS-Reference Banks-ICAP SwapPX	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMS-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMS-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMT-T7051	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMT-T7052	All quoted tenors	N/A	Per ISDA 2006	N
USD-COF11-FHLBSF	All quoted tenors	N/A	Per ISDA 2006	N
USD-COF11-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
USD-COF11-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
USD-CP-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-CP-Reference Dealers	All quoted tenors	N/A	Per ISDA 2006	N
USD-Federal Funds-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-Federal Funds-H.15-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
USD-Federal Funds-H.15-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
USD-Federal Funds-Reference Dealers	All quoted tenors	N/A	Per ISDA 2006	N
USD-FFCB-DISCO	All quoted tenors	N/A	Per ISDA 2006	N
USD-ISDA-Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
USD-ISDA-Swap Rate-3:00	All quoted tenors	N/A	Per ISDA 2006	N
USD-ISDAFIX3-Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
USD-ISDAFIX3-Swap Rate-3:00	All quoted tenors	N/A	Per ISDA 2006	N
USD-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	N
USD-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
USD-LIBOR-ISDA	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
USD-LIBOR-LIBO	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
USD-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
USD-OIS-11:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
USD-OIS-11:00-LON-ICAP	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
USD-OIS-11:00-NY-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
USD-OIS-3:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
USD-OIS-3:00-NY-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
USD-Prime-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-Prime-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
USD-S&P Index-High Grade	All quoted tenors	N/A	Per ISDA 2006	N
USD-SIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
USD-SIBOR-SIBO	All quoted tenors	N/A	Per ISDA 2006	N
USD-SOFR-Compound	N/A	N/A	N/A	N
USD-SIFMA Municipal Swap Index	All quoted tenors	N/A	Per ISDA 2006	N
USD-TBILL-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-TBILL-H.15-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
USD-TBILL-Secondary Market	All quoted tenors	N/A	Per ISDA 2006	N
USD-TIBOR-ISDC	All quoted tenors	N/A	Per ISDA 2006	N
USD-TIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-ICAP BrokerTec	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-SwapMarker100	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-SwapMarker99	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-T19901	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-T500	All quoted tenors	N/A	Per ISDA 2006	N

Equity Index Requirements and Defaults

Date	Requirement	Default
Effective Date Business Day Convention		No Adjustment
Designated Maturities for Linear Interpolation		Tenors quoted next shorter and longer than the actual Calculation Period length

EXHIBIT C

EXPLANATION AND ANALYSIS OF THE CONTRACTS' COMPLIANCE WITH APPLICABLE CORE PRINCIPLES AND COMMISSION REGULATIONS

As required by Commodity Futures Trading Commission ("Commission") Regulation 40.2(a), the following analysis, in narrative form, demonstrates that Equity Index Swaps (the "Contracts") are consistent with the requirements of the Commodity Exchange Act, as amended (the "Act"), and the Commission regulations and guidance thereunder (in particular, Appendix B to Part 37 and Appendix C to Part 38).

Appendix B to Part 37

CORE PRINCIPLE 3 OF SECTION 5H OF THE ACT—SWAPS NOT READILY SUSCEPTIBLE TO MANIPULATION; CORE PRINCIPLE 4 OF SECTION 5H OF THE ACT—MONITORING OF TRADING AND TRADE PROCESSING

The swap execution facility shall permit trading only in swaps that are not readily susceptible to manipulation.

(a) Guidance.

(1) In general, a swap contract is an agreement to exchange a series of cash flows over a period of time based on some reference price, which could be a single price, such as an absolute level or a differential, or a price index calculated based on multiple observations. Moreover, such a reference price may be reported by the swap execution facility itself or by an independent third party. When listing a swap for trading, a swap execution facility shall ensure a swap's compliance with Core Principle 3, paying special attention to the reference price used to determine the cash flow exchanges. Specifically, Core Principle 3 requires that the reference price used by a swap not be readily susceptible to manipulation. As a result, when identifying a reference price, a swap execution facility should either: Calculate its own reference price using suitable and well-established acceptable methods or carefully select a reliable third-party index.

(2) The importance of the reference price's suitability for a given swap is similar to that of the final settlement price for a cash-settled futures contract. If the final settlement price is manipulated, then the futures contract does not serve its intended price discovery and risk management functions. Similarly, inappropriate reference prices cause the cash flows between the buyer and seller to differ from the proper amounts, thus benefitting one party and disadvantaging the other. Thus, careful consideration should be given to the potential for manipulation or distortion of the reference price.

The reference price for the equity leg of the Contracts is the level of the relevant index. The indices are broad-based and are maintained by third parties. The stock underlying the indices are numerous and are broadly traded and liquid. In addition, the indices may have futures and exchange traded fund instruments tied to them which make the market for the index itself deep and liquid.

The reference for the dividend leg of the Contracts is the dividends paid on the shares comprised in the index. These dividend payments are the result of decisions made, on a firm-by-firm basis, by the boards of directors of the issuers of the component shares.

The reference rate for the floating rate of the Contracts is one of several widely used benchmarks such as

USD-LIBOR-BBA-CDOR. These rates are administered and calculated by third-party providers using specific guidelines. Many of these providers are regulated in their home jurisdictions.

The Contracts are not susceptible to manipulation for a number of reasons. First, the stocks underlying the indices are numerous and are broadly traded and liquid, and the indices may have futures and exchange traded fund instruments tied to them which make the market for the index itself deep and liquid. Second, tpSEF has established rules and an enforcement infrastructure to prevent manipulation. tpSEF staff conduct real-time market surveillance and the National Futures Association (“NFA”) provides regulatory services on a T+1 basis. NFA’s services include comprehensive trade practice and market surveillance services (the scope of which can be found in the Regulatory Services Agreement between NFA and tpSEF submitted to the Commission as part of tpSEF’s swap execution facility application) (note that this also demonstrates compliance with Core Principle 4).

(3) For swaps that are settled by physical delivery or by cash settlement refer to the guidance in Appendix C to Part 38 of this chapter—Demonstration of Compliance that a Contract is not Readily Susceptible to Manipulation, section b(2) and section c(4), respectively.

Please see below.

Appendix C to Part 38 - Demonstration of Compliance That a Contract Is Not Readily Susceptible to Manipulation

(c) Futures Contracts Settled by Cash Settlement. (1) Cash settlement is a method of settling certain futures or option contracts whereby, at contract expiration, the contract is settled by cash payment in lieu of physical delivery of the commodity or instrument underlying the contract. An acceptable specification of the cash settlement price for commodity futures and option contracts would include rules that fully describe the essential economic characteristics of the underlying commodity (e.g., grade, quality, weight, class, growth, issuer, maturity, source, rating, description of the underlying index and index's calculation methodology, etc.), as well as how the final settlement price is calculated. In addition, the rules should clearly specify the trading months and hours of trading, the last trading day, contract size, minimum price change (tick size) and any limitations on price movements (e.g., price limits or trading halts).

Essential Economic Characteristics of the Contract Terms

The terms and conditions of the Contracts match the terms of equity index swaps that are commonly offered in the market and are listed in Exhibit B.

Calculation of Cash Settlement Price

The cash settlement price will be calculated in the following manner:

The equity amount payer will pay (i) any appreciation in the level of the index (expressed as a percentage) times the notional amount plus (ii) the dividends paid on the shares in the index. (Note that the dividend leg is not uniformly used, but is discussed in this submission for completeness.)

The equity amount receiver will pay (i) any depreciation in the level of the index (expressed as a percentage) times the notional amount plus (ii) the product of a fixed or floating rate and spread times the notional amount times the day count fraction.

(2) Cash settled contracts may be susceptible to manipulation or price distortion. In evaluating the susceptibility of a cash-settled contract to manipulation, a designated contract market should consider the size and liquidity of the cash market that underlies the listed contract in a manner that follows the determination of deliverable supply as noted above in (b)(1). In particular, situations susceptible to manipulation include those in which the volume of cash market transactions and/or the number of participants contacted in determining the cash-settlement price are very low. Cash-settled contracts may create an incentive to manipulate or artificially influence the data from which the cash-settlement price is derived or to exert undue influence on the cash-settlement price's computation in order to profit on a futures position in that commodity. The utility of a cash-settled contract for risk management and price discovery would be significantly impaired if the cash settlement price is not a reliable or robust indicator of the value of the underlying commodity or instrument. Accordingly, careful consideration should be given to the potential for manipulation or distortion of the cash settlement price, as well as the reliability of that price as an indicator of cash market values. Appropriate consideration also should be given to the commercial acceptability, public availability, and timeliness of the price series that is used to calculate the cash settlement price. Documentation demonstrating that the settlement price index is a reliable indicator of market values and conditions and is commonly used as a reference index by industry/market agents should be provided. Such documentation may take on various forms, including carefully documented interview results with knowledgeable agents.

The Contracts operate in a very liquid market with numerous participants. Also, the cash settlement price is not easily susceptible to manipulation or distortion since, as to the index-based component, the composition of the index is announced by the index sponsor, as to the dividend leg, the dividends paid are announced by the issuer, and, in the case of the fixed or floating rate leg, the method of determining the price is based on factors that are fixed at the start of a Contract (i.e., payment frequency, day count conventions, fixed interest rate, floating reset dates) and the applicable reference rate. Each of the available underlying indices, dividend payments and reference rates is widely accepted by market participants and data is readily accessible through numerous news outlets.

(3) Where an independent, private-sector third party calculates the cash settlement price series, a designated contract market should consider the need for a licensing agreement that will ensure the designated contract market's rights to the use of the price series to settle the listed contract.

(i) Where an independent, private-sector third party calculates the cash settlement price series, the designated contract market should verify that the third party utilizes business practices that minimize the opportunity or incentive to manipulate the cash-settlement price series. Such safeguards may include lock-downs, prohibitions against derivatives trading by employees, or public dissemination of the names of sources and the price quotes they provide. Because a cash-settled contract may create an incentive to manipulate or artificially influence the underlying market from which the cash-settlement price is derived or to exert undue influence on the cash-settlement computation in order to profit on a futures position in that commodity, a designated contract market should, whenever practicable, enter into an information-sharing agreement with the third-party provider which would enable the designated contract market to better detect and prevent manipulative behavior.

As described above, the cash settlement price is calculated through a cash settlement method that is not easily susceptible to manipulation.

(ii) Where a designated contract market itself generates the cash settlement price series, the designated contract market should establish calculation procedures that safeguard against potential

attempts to artificially influence the price. For example, if the cash settlement price is derived by the designated contract market based on a survey of cash market sources, the designated contract market should maintain a list of such entities which all should be reputable sources with knowledge of the cash market. In addition, the sample of sources polled should be representative of the cash market, and the poll should be conducted at a time when trading in the cash market is active.

Please see above.

(iii) The cash-settlement calculation should involve computational procedures that eliminate or reduce the impact of potentially unrepresentative data.

(iv) The cash settlement price should be an accurate and reliable indicator of prices in the underlying cash market. The cash settlement price also should be acceptable to commercial users of the commodity contract. The registered entity should fully document that the settlement price is accurate, reliable, highly regarded by industry/market agents, and fully reflects the economic and commercial conditions of the relevant designated contract market.

Please see above.

(v) To the extent possible, the cash settlement price should be based on cash price series that are publicly available and available on a timely basis for purposes of calculating the cash settlement price at the expiration of a commodity contract. A designated contract market should make the final cash settlement price and any other supporting information that is appropriate for release to the public, available to the public when cash settlement is accomplished by the derivatives clearing organization. If the cash settlement price is based on cash prices that are obtained from non-public sources (e.g., cash market surveys conducted by the designated contract market or by third parties on behalf of the designated contract market), a designated contract market should make available to the public as soon as possible after a contract month's expiration the final cash settlement price as well as any other supporting information that is appropriate or feasible to make available to the public.

The various index levels, dividend payments and reference rates are readily available via a number of sources.

(4) Contract terms and conditions requirements for futures contracts settled by cash settlement.

(i) An acceptable specification of the terms and conditions of a cash-settled commodity contract will also set forth the trading months, last trading day, contract size, minimum price change (tick size) and daily price limits, if any.

Please see Exhibit B for the Contracts' terms and conditions.

(A) *Commodity Characteristics*: The terms and conditions of a commodity contract should describe the commodity underlying the contract.

The available underlying indices are included in the terms and conditions set forth in Exhibit B. These are well-established, publicly available third-party equity index market benchmarks and are the timeliest, recognized and reliable benchmarks for equity prices in their respective markets. The index levels are readily available and commercially acceptable as benchmarks for investors, portfolio managers and public policy makers.

(B) *Contract Size and Trading Unit:* An acceptable specification of the trading unit would be a contract size that is consistent with customary transactions in the cash market. A designated contract market may opt to set the contract size smaller than that of standard cash market transactions.

The size of each Contract is consistent with customary transaction sizes in the market.

(C) *Cash Settlement Procedure:* The cash settlement price should be reliable, acceptable, publicly available, and reported in a timely manner as described in paragraphs (c)(3)(iv) and (c)(3)(v) of this appendix C.

The cash settlement procedure and an explanation of how, in the context of these Contracts, it is not readily susceptible to manipulation, is described above.

(D) *Pricing Basis and Minimum Price Fluctuation (Minimum Tick):* The minimum price increment (tick) should be set a level that is equal to, or less than, the minimum price increment commonly observed in cash market transactions for the underlying commodity. Specifying a futures' minimum tick that is greater than the minimum price increment in the cash market can undermine the risk management utility of the futures contract by preventing hedgers from efficiently establishing and liquidating futures positions that are used to hedge anticipated cash market transactions or cash market positions.

As agreed between counterparties.

(E) *Maximum Price Fluctuation Limits:* Designated contract markets may adopt price limits to: (1) Reduce or constrain price movements in a trading day that may not be reflective of true market conditions but might be caused by traders overreacting to news; (2) Allow additional time for the collection of margins in times of large price movements; and (3) Provide a "cooling-off" period for futures market participants to respond to bona fide changes in market supply and demand fundamentals that would lead to large cash and futures price changes. If price-limit provisions are adopted, the limits should be set at levels that are not overly restrictive in relation to price movements in the cash market for the commodity underlying the futures contract. For broad-based stock index futures contracts, rules should be adopted that coordinate with New York Stock Exchange ("NYSE") declared Circuit Breaker Trading Halts (or other market coordinated Circuit Breaker mechanism) and would recommence trading in the futures contract only after trading in the majority of the stocks underlying the index has recommenced.

As agreed between counterparties.

(F) *Last Trading Day:* Specification of the last trading day for expiring contracts should be established such that it occurs before publication of the underlying third-party price index or determination of the final settlement price. If the designated contract market chooses to allow trading to occur through the determination of the final settlement price, then the designated contract market should show that futures trading would not distort the final settlement price calculation.

The last trading day will be the maturity date of each Contract, which is set by the individual counterparties.

(G) *Trading Months:* Trading months should be established based on the risk management needs of

commercial entities as well as the availability of price and other data needed to calculate the cash settlement price in the specified months. Specification of the last trading day should take into consideration whether the volume of transactions underlying the cash settlement price would be unduly limited by occurrence of holidays or traditional holiday periods in the cash market. Moreover, a contract should not be listed past the date for which the designated contract market has access to use a proprietary price index for cash settlement.

Payments are settled in accordance with the payment frequency of the particular Contract, which is a flexible term.

(H) *Speculative Limits*: Specific rules and policies for speculative position limits are set forth in part 150 and/or part 151, as applicable, of the Commission's regulations.

None required by Parts 150 or 151.

(I) *Reportable Levels*: Refer to § 15.03 of the Commission's regulations.

tpSEF will adhere to the applicable reporting levels set forth in § 15.03 of the Commission's regulations.

(J) *Trading Hours*: Should be set by the designated contract market to delineate each trading day.

Each Contract is traded twenty-three hours a day from Sunday to Friday. The Contracts are not traded between 5:30 p.m. and 6:30 p.m. Eastern Time.

EXHIBIT D

Equity Index Swaps

**Terms and Conditions
(Marked Against April 26, 2022 Version)**

Summary:	This covers equity index swaps (each, an “Equity Index Swap”).
Limitations on Available Selections and Default Settings:	<p>The terms under which an Equity Index Swap may be traded are shown below or in the attached tables.</p> <p>For amounts or rates, the relevant term cannot be less than the specified Minimum, must represent an even Increment and cannot exceed the Maximum; for a date, the date cannot be earlier than Earliest nor later than Latest.</p> <p>For Business Days, the defaults shall be the locations specified for the relevant currency, any additional locations specified for the relevant Floating Rate Options.</p> <p>The parties may add additional locations from the Available Locations and may eliminate some or all of the other locations, so long as there is at least one location in which payment may be made.</p> <p>For these purposes “TARGET” is considered a location.</p> <p>In many cases there are normal “vanilla” terms on which the parties will transact. These are shown as “Default ” and will apply unless the parties vary them.</p> <p>It should be noted that these contracts can be traded in a variety of currencies. Since each national market has its own peculiarities, the “Available Terms” and/or “Default Terms” may vary by currency.</p> <p>In some cases, the same contract might have different terms depending on the market in which it is traded (<i>e.g.</i>, London versus NY). In that case the default settings may vary by market.</p>
Incorporated Standards:	<p>This contract description incorporates by reference the following industry standard documentation and standards:</p> <ul style="list-style-type: none">(a) 2006 ISDA Definitions(b) 2002 ISDA Equity Derivatives Definitions (“Equity Definitions”)(c) Annex IS to 2009 Americas Master Equity Derivatives Confirmation, to 2007 European Master Equity Derivatives Confirmation Agreement (for EMEA indices, as indicated on the Equity Index Available

	Indices attached) or to Second Revised 2005 AEJ Interdealer Master Equity Derivatives Confirmation Agreement (for AEJ indices, as indicated on the Equity Index Available Indices attached) (d) the Revised ISDA AEJ Reference Price Source Matrix (June 25, 2009, or as updated effective prior to the Trade Date) (“AEJ Source”) For convenience, certain terms are mapped to their FpML 5.5 equivalent.
Product Type/ISDA OTC Taxonomy:	
ISDA OTC Asset Class:	Equity
ISDA OTC Base Product:	Swap
ISDA OTC Sub-Product:	Price Return Basic Performance
ISDA OTC Transaction type:	Single Index
Further Limitations:	None
Terms:	
Trade Date:	As agreed by the parties.
Strike Date:	For a Forward Starting Transaction, as agreed by the parties (only for EMEA Indices).
Forward Starting:	As per Annex IS (only for EMEA Indices).
Notional Amount (“notional”):	An amount in one of the Available Currencies (see below) agreed by the parties.
Effective Date (“effectiveDate”):	(i) The date specified by the parties, adjusted in accordance with any applicable Business Day Convention, or (ii) in the case of AEJ Indices, per Annex IS.
Effective Date Business Days:	As specified by the parties from among the Available Business Days (except for AEJ Indices).
Effective Date Business Day Convention:	As specified by the parties from among the Available Business Day Conventions (except for AEJ Indices).
Termination Date (“terminationDate”):	Per Annex IS, unless otherwise specified by the parties.
Index:	As specified by the parties from among the Available Indices.
Number of Index Units:	As specified by the parties or, if not so specified, determined by Annex IS (except for AEJ Indices).
Index Unit:	Per Annex IS (except for AEJ Indices and EMEA Indices).
Exchange(s):	(i) Per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as specified by the parties.
Multiple Exchange Index Annex/Component Security Index Annex:	Per Annex IS (EMEA Indices only).
Related Exchanges:	(i) Per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as specified by the parties.
Hedging Party:	(i) As specified by the parties, or (ii) in the case of AEJ Indices, per Annex IS.
Determining Party:	(i) As specified by the parties, or (ii) in the case of AEJ Indices, per Annex IS.
Equity Amounts:	
Equity Amount Payer (“payerPartyReference”):	As specified by the parties.
Equity Notional Amount:	As specified by the parties.
Equity Notional Reset:	As per Annex IS.

Type of Return:	(i) As specified by the parties, or (ii) in the case of AEJ Indices, per Annex IS unless specified by the parties.
Initial Price Election:	As specified by the parties (in the case of an EMEA Index only).
Initial Price:	As specified by the parties and (other than in the case of AEJ Indices) adjusted in accordance with Annex IS.
Final Price Election:	As specified by the parties (in the case of an EMEA Index only).
Final Price:	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as specified by the parties or, if not so specified, per the Equity Definitions.
Valuation Time:	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as specified by the parties or, if not so specified, per the Equity Definitions.
Valuation Dates:	As specified by the parties.
Averaging Dates:	In the case of AEJ Indices, as and if specified by the parties.
Floating Amount:	
Floating Rate Payer (“payerPartyReference”):	As specified by the parties.
Notional Amount (“notionalAmount”):	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as specified by the parties or, if not so specified, per the Equity Definitions.
Payment Dates:	As per Annex IS, unless otherwise specified by the parties.
Initial Floating Rate:	As specified by the parties.
Floating Rate Option (“floatingRateIndex”):	As specified by the parties.
Designated Maturity (“indexTenor”):	As specified by the parties.
Linear Interpolation:	For the Calculation Periods specified by the parties to the extent permitted by Annex IS.
Shorter Designated Maturity for Linear Interpolation:	For a Calculation Period to which Linear Interpolation applies, as specified by the parties.
Longer Designated Maturity for Linear Interpolation:	For a Calculation Period to which Linear Interpolation applies, as specified by the parties.
Spread:	As specified by the parties.
Day Count Fraction:	As specified by the parties.
Reset Dates (“resetDate”):	As per Annex IS.
Payment Dates Business Days:	As per Annex IS.
Business Days (Other Than Payment Dates):	As specified by the parties.
Business Day Convention (Other Than Payment Dates):	As per Annex IS, unless otherwise specified by the parties.
Compounding:	As specified by the parties (EMEA Indices only).
Compounding Dates:	As specified by the parties if Compounding is applicable (EMEA Indices only).
Futures Price Valuation:	
Futures Price Valuation:	(i) As per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as specified by the parties or, if not so specified, per the Equity Definitions.
Exchange-traded Contract:	As specified in the Transaction Supplement.
Adjustment to Section 6.8 of the Equity Definitions:	As per Annex IS (other than in the case of AEJ Indices).
Settlement Terms:	
Cash Settlement:	As per Annex IS.
Settlement Currency:	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as

	agreed by the parties.
FX Rate:	As agreed by the parties or as specified by the parties from among the Available FX Rates.
Dividends:	
Dividend Payment Date(s):	If type of return is “Total Return” (i) as per Annex IS unless otherwise agreed by the parties, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Dividend Period:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Dividend Amount:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Relevant Dividend:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Reinvestment of Dividends:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties.
Dividend Recovery:	If type of return is “Total Return” (i) as per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Declared Cash Dividend Percentage:	If type of return is “Total Return” (i) as per Annex IS unless otherwise agreed by the parties, (ii) in the case of AEJ Indices, as and if agreed by the parties, or (iii) in the case of EMEA Indices, as agreed by the parties.
Declared Cash Equivalent Dividend Percentage:	If type of return is “Total Return” (i) as per Annex IS unless otherwise agreed by the parties, or (ii) in the case of AEJ Indices, as and if agreed by the parties.
Index Adjustment Events:	
Index Cancellation:	As per Annex IS.
Index Modification:	As per Annex IS.
Index Disruption:	As per Annex IS.
Additional Disruption Events:	
Change in Law:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as per Annex IS unless otherwise agreed by the parties.
Insolvency Filing:	(i) As per Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definitions.
Hedging Disruption:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as per Annex IS (as applicable to the relevant country of underlier) unless otherwise agreed by the parties.
Increased Cost of Hedging:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definition.
Consequences of Hedging Disruption:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definition.
Loss of Stock Borrow:	(i) As per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as agreed by

	the parties or, absent such agreement, per the Equity Definition.
Increased Cost of Stock Borrow:	(i) As per Annex IS, unless otherwise specified by the parties, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definition.
Cancellation Amount:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, as agreed by the parties or, absent such agreement, per the Equity Definition.
Non-Reliance:	As per Annex IS.
Agreements and Acknowledgements Regarding Hedging Activities:	As per Annex IS.
Additional Acknowledgements:	As per Annex IS.
Index Disclaimer:	As per Annex IS.
Optional Early Termination:	(i) As agreed by the parties from among the provisions in Annex IS, or (ii) in the case of AEJ Indices, inapplicable.
Break Funding Recovery:	If Optional Early Termination is applicable, as specified by the parties.
Break Fee:	As specified by the parties in the case of EMEA Indices.
Calculation Agent:	(i) As agreed by the parties, or (ii) in the case of AEJ Indices, per Annex IS unless otherwise agreed by the parties.

Equity Index Available Currencies and Required Business Days

Three Letter Currency Code (ISDA/ISO)	Currency Name (ISDA)	Basic Business Day Locations For Currency (FpML Codes)
AUD	Australian Dollar	AUSY
CAD	Canadian Dollar	CATO
EUR	Euro	EUTA
GBP	Sterling	GBLO
HKD	Hong Kong Dollar	HKHK
JPY	Japanese Yen	JPTO
KRW	Korean Won	KRSE
SEK	Swedish Krona	SEST
USD	United States Dollars	USNY

Equity Index Available Business Day Conventions

ISDA Name
Following
Modified/Modified Following
No Adjustment
Preceding
FRN Convention/Eurodollar Convention

Equity Index Available Indices

Abbr	Name
0000AR	S&P/TSX Composite Total Return Index
AEX	AEX Index (EMEA)
AMZX	Alerian MLP Index Total Return

AMZIXVWAP	Alerian MLP Infrastructure Index Total Return VWAP
AS51	S&P/ASX 200 (AEJ)
BEL20	BEL20 Index (EMEA)
CAC	Cotation Assistée en Continu 40 (EMEA)
DAX	Deutscher Aktien Index (EMEA)
DJNETT	DJ InternetCompTr
DJITR	Dow Jones Industrial Average Total Return
DJUSRE	Dow Jones U.S. Real Estate Index
EWTRGSPC	REUTERS – REU - S&P EW 500 INDEX
FTSEMIB	FTSE MIB Index (EMEA)
GCUDCA	MSCI Daily TR Gross Small Cap Canada USD
GCUDUS	MSCI Daily Total Return Gross Small Cap USA USD
GDDLCA	MSCI Canada Index CAD Total Return (Gross Dividends)
GDDUCA	MSCI Canada Index USD Daily Total Return (Gross Dividends)
GDDUEAFE	MSCI EAFE Index Total Return (Gross Dividends)
GDDUNA	MSCI North American Index USD Total Return (Gross Dividends)
GDDUUS	MSCI US Index Total Return (Gross Dividends)
HSCEI	Hang Seng China Enterprises Index (AEJ)
HSI	Hang Seng Index (AEJ)
IBEX	IBEX 35 Index(EMEA)
IBOV	BOVESPA Index
IXBTR	S&P 500 Material Select Sector Total Return
IXCPR	Communication Services Select Sector Index
IXCTR	Communication Services Select Sector Index TR
IXETR	S&P 500 Energy Select Sector Total Return
IXITR	S&P 500 Industrials Select Sector Total Return
IXMTR	S&P 500 Financials Select Sector Total Return
IXRTR	S&P 500 Consumer Staples Select Sector Total Return
IXTTR	S&P 500 Technology Select Sector Total Return
IXUTR	S&P 500 Utilities Select Sector Total Return
IXVTR	S&P 500 Health Care Select Sector Total Return
IXYTR	S&P 500 Consumer Discretionary Select Sector Total Return
KOSPI	Korea Composite Stock Price Index (AEJ)
M1CNA	MSCI China A Inclusion USD Index (Net)
M8CA0EN	MSCI Canada Energy Gross Return Index
M8CA0FN	MSCI Canada Financials Gross Return Index
MEXBOL	Mexican IPC Index (Indice de Precios y Cotizaciones)
MSLUELAN	MSCI Emerging Markets Latin America Small Cap Index (USD) (Net Dividends)
NDDLCA	MSCI Canada Index CAD Total Return (Net Dividends)
NDDUEAFE	MSCI EAFE Net Total Return USD Index
NDDUNA	MSCI North American Index USD Total Return (Net Dividends)
NDDUUS	MSCI US Index Total Return (Net Dividends)
NDDUJN	MSCI Japan Index Total Return (Net Dividends)
NDEUMXF	MSCI Mexico Index USD Total Return (Net Dividends)
NDEUSCH	MSCI Chile Index Total Return (Net Dividends)
NDEUSCO	MSCI Colombia Index Total Return (Net Dividends)
NDEUSPR	MSCI Peru Index Total Return (Net Dividends)
NDUEBRA	MSCI Brazil Index USD Total Return (Net Dividends)
NDUEEGFL	MSCI Emerging Markets Latin America USD
NDX	NASDAQ-100
NKY	Nikkei 225 Index (AEJ)
NQCAPST	Capital Strength Total Return Index

NQCAPSTT	The Capital Strength Index
NQDVRIST	NASDAQ US Rising Dividend Achievers Index TR
NQRSKLT	Nasdaq Riskalyze US Large Cap
NQ96DVUX	NASDAQ Technology Dividend TR
OEXT	S&P 100 Total Return
OMX	OMX Stockholm 30 (EMEA)
RGUSFL	Russell 1000 Financial
RU10GRTR	Russell 1000 Growth Total Return
RU10INTR	Russell 1000 Total Return
RU10VATR	Russell 1000 Value Total Return
RU20GRTR	Russell 2000 Growth Total Return
RU20INTR	Russell 2000 Total Return
RU20VATR	Russell 2000 Value Total Return
RUMCGRTR	Russell Midcap Growth Index Total Return
SOLCABTR	Solactive Canada Bank TR Index
SP5LVIT	S&P 500 Low Volatility Total Return Index
SPDAUDT	S&P 500 Dividend Aristocrats Total Return Index
SPSIBITR	S&P Biotechnology Select Industry Total Return Index
SPSIOP	S&P Oil & Gas Exploration & Production Select Industry Index
SPTRCOND	S&P 500 Consumer Discretionary Sector Total Return Index
SPTRCONS	S&P 500 Consumer Staples Sector Total Return Index
SPTRENRS	S&P 500 Energy Sector Total Return Index
SPTRFINL	S&P 500 Financials Sector Total Return Index
SPTRHLTH	S&P 500 Health Care Sector Total Return Index
SPTRINDU	S&P 500 Industrials Sector Total Return Index
SPTRINFT	S&P 500 Information Technology Sector Total Return Index
SPTRMATR	S&P 500 Materials Sector Total Return Index
SPTRMDCP	S&P MidCap 400 Total Return
SPTRRLST	S&P 500 Real Estate Sector Total Return Index
SPTRSMCP	S&P SmallCap 600 Total Return
SPTRSVX	S&P 500 Value Total Return Index
SPTRUTIL	S&P 500 Utilities Sector Total Return Index
SPXT	S&P 500 Total Return
STBANKXR	S&P/TSX Composite Banks GICS Level Industry Group Total Return Index
STCHEMR	S&P/TSX Composite Index Chemicals GICS Industry Total Return
STDBNKR	S&P/TSX Diversified Banks Total Return Index
STELUTXR	S&P/TSX Composite Index Electric Utilities GICS Industry Total Return Index
STENRS	S&P/TSX Composite Energy Sector GICS Level 1 Index
STENRSR	S&P/TSX Composite Energy Index Total Return Swap
STFINLR	S&P/TSX Composite Financials GICS Level Sector Total Return Index
STINSUR	S&P/TSX Composite Insurance GICS Industry Group Total Return Index
STLIFER	S&P/TSX Composite Life & Health Insurance Total Return Index
STMATR	S&P/TSX Composite Materials GICS Level Sector Total Return Index
STOGSTR	S&P/TSX Oil & Gas Sector Total Return Index
STOGSTR	S&P/TSX Oil & Gas Storage Total Return Index
STOILPR	S&P/TSX Composite Oil & Gas Exploration Total Return Index
STMEDAR	S&P/TSX Composite Media GICS Industry Group Total Return Index
STMUTIXR	S&P/TSX Multiple Utilities & Energy Power Total Return Index
STREITSR	S&P/TSX REIT Total Return Index
STTELSR	S&P/TSX Composite Telecom Services GICS Level Sector Total Return Index
STTELSXR	S&P/TSX Composite Telecom Services GSI Total Return Index
STUTILR	S&P/TSX Composite Utilities GICS Level Sector Total Return Index

SX5E	Eurostoxx 50 Index (EMEA)
TSX69	S&P/TSX 60 Index
TX60AR	S&P/TSX 60 Total Return Index
TTENAR	S&P/TSX Capped Energy Total Return Index
TTUTAR	S&P/TSX Capped Utilities Total Return Index
UKX	FTSE 100 Index (EMEA)
XNDX	NASDAQ-100 Total Return
XSOX	PHLX Semiconductor Sector Index Total Return

Equity Index Available FX Rates

Currency Pair	Available FX Rates
KRW/USD	BB: The rate implied by sourcing the Index on Bloomberg via "KOSPI>USD>GO" ISDA: The rate determined in accordance with the AEJ Source

Equity Index Available Day Count Fractions

ISDA Name
1/1
30/360, 360/360, Bond Basis
Actual/360
Actual/365 (Fixed), Act/365 (Fixed), A/365 (Fixed), A/365F
Actual/Actual, Actual/Actual (ISDA), Act/Act, Act/Act (ISDA)
Actual/Actual (ICMA), Act/Act, Act/Act (ICMA)

Equity Index Earliest and Latest Effective and Termination Dates

Currency	Earliest Effective Date	Latest Effective Date	Earliest Termination Date	Latest Termination Date
N/A	N/A	N/A	N/A	N/A

Equity Index Notional Amounts

Currency	Minimum	Increment	Maximum	Default
USD	10,000,000	1,000,000	N/A	N/A

Equity Index Floating Rate Options and Defaults

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
AUD-AONIA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
AUD-AONIA-OIS-COMPOUND-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-AUBBSW	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-BBSW	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-BBSW-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-BBSY (BID)	All quoted tenors	N/A	Per ISDA 2006	N
AUD-BBR-ISDC	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
AUD-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	N
AUD-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
AUD-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Quarterly Swap Rate-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Quarterly Swap Rate-ICAP-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Semi-annual Swap Rate-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Semi-Annual Swap Rate-ICAP-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
AUD-Swap Rate-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-CDOR	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-CDOR-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-ISDD	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
CAD-BA-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
CAD-CORRA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
CAD-ISDA-Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
CAD-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
CAD-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
CAD-LIBOR-BBA-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
CAD-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
CAD-REPO-CORRA	All quoted tenors	N/A	Per ISDA 2006	N
CAD-TBILL-ISDD	All quoted tenors	N/A	Per ISDA 2006	N
CAD-TBILL-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
CAD-TBILL-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
CAD-TBILL-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-10:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-10:00-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-10:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-10:00-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-11:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-11:00-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
EUR-Annual Swap Rate-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-11:00-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-3 Month	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-3 Month-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-Annual Swap Rate-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-AVERAGE	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-10:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-10:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-OIS-COMPOUND-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EONIA-Swap-Index	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Act/365	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Act/365-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURIBOR-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
EUR-EURONIA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
EUR-ISDA-EURIBOR Swap Rate-11:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-ISDA-EURIBOR Swap Rate-12:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-ISDA-LIBOR Swap Rate-10:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-ISDA-LIBOR Swap Rate-11:00	All quoted tenors	N/A	Per ISDA 2006	N
EUR-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	N
EUR-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
EUR-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TAM-CDC	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC10-CNO	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC10-CNO-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC10-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC5-CNO	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
EUR-TEC5-CNO-SwapMarker	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TEC5-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
EUR-TMM-CDC-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
GBP USD-Basis Swaps-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
GBP-ISDA-Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
GBP-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	N
GBP-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
GBP-LIBOR-ISDA	All quoted tenors	N/A	Per ISDA 2006	N
GBP-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
GBP-Semi-Annual Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
GBP-Semi-Annual Swap Rate-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
GBP-Semi-Annual Swap Rate-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
GBP-SONIA-OIS-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
GBP-WMBA-RONIA-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
GBP-WMBA-SONIA-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIBOR-ATHIBOR	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIBOR-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIMID-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
GRD-ATHIMID-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-HIBOR-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-HIBOR=	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-HKAB	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-HKAB-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-ISDC	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
HKD-HONIX-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
HKD-ISDA-Swap Rate-11:00	All quoted tenors	N/A	Per ISDA 2006	N
HKD-ISDA-Swap Rate-4:00	All quoted tenors	N/A	Per ISDA 2006	N
HKD-Quarterly-Annual Swap Rate-11:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
HKD-Quarterly-Annual Swap Rate-4:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
HKD-Quarterly-Annual Swap Rate-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
JPY-BBSF-Bloomberg-10:00	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
JPY-BBSF-Bloomberg-15:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-ISDA-Swap Rate-10:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-ISDA-Swap Rate-15:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-LIBOR-FRASET	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-LIBOR-ISDA	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
JPY-MUTANCALL-TONAR	All quoted tenors	N/A	Per ISDA 2006	N
JPY-OIS-11:00-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-17096	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-17097	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM (10 Banks)	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM (5 Banks)	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM (All Banks)	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM (All Banks)-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-TIBM-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TIBOR-ZTIBOR	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TONA-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Reuters-10:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Reuters-15:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Telerate-10:00	All quoted tenors	N/A	Per ISDA 2006	N
JPY-TSR-Telerate-15:00	All quoted tenors	N/A	Per ISDA 2006	N
KRW-CD-3220	All quoted tenors	N/A	Per ISDA 2006	N
KRW-CD-KSDA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
KRW-Quarterly Annual Swap Rate-3:30-ICAP	3M	N/A	Per ISDA 2006	N
KRW-Bond-3222	3M	N/A	Per ISDA 2006	N
SEK-Annual Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
SEK-Annual Swap Rate-SESWFI	All quoted tenors	N/A	Per ISDA 2006	N
SEK-SIOR-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
SEK-STIBOR-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
SEK-STIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
SEK-STIBOR-SIDE	All quoted tenors	N/A	Per ISDA 2006	N
SEK-Annual Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
USD-Annual Swap Rate-11:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
USD-BA-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-BA-Reference Dealers	All quoted tenors	N/A	Per ISDA 2006	N
USD-BMA Municipal Swap Index	All quoted tenors	N/A	Per ISDA 2006	N
USD-CD-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-CD-Reference Dealers	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMS-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMS-Reference Banks-ICAP SwapPX	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMS-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMS-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMT-T7051	All quoted tenors	N/A	Per ISDA 2006	N
USD-CMT-T7052	All quoted tenors	N/A	Per ISDA 2006	N
USD-COF11-FHLBSF	All quoted tenors	N/A	Per ISDA 2006	N
USD-COF11-Reuters	All quoted tenors	N/A	Per ISDA 2006	N
USD-COF11-Telerate	All quoted tenors	N/A	Per ISDA 2006	N
USD-CP-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-CP-Reference Dealers	All quoted tenors	N/A	Per ISDA 2006	N
USD-Federal Funds-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-Federal Funds-H.15-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
USD-Federal Funds-H.15-OIS-COMPOUND	All quoted tenors	N/A	Per ISDA 2006	N
USD-Federal Funds-Reference Dealers	All quoted tenors	N/A	Per ISDA 2006	N
USD-FFCB-DISCO	All quoted tenors	N/A	Per ISDA 2006	N
USD-ISDA-Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
USD-ISDA-Swap Rate-3:00	All quoted tenors	N/A	Per ISDA 2006	N
USD-ISDAFIX3-Swap Rate	All quoted tenors	N/A	Per ISDA 2006	N
USD-ISDAFIX3-Swap Rate-3:00	All quoted tenors	N/A	Per ISDA 2006	N
USD-LIBOR-BBA	All quoted tenors	N/A	Per ISDA 2006	N
USD-LIBOR-BBA-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
USD-LIBOR-ISDA	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
USD-LIBOR-LIBO	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)
USD-LIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	GBLO (Applies to Both Legs)

Floating Rate Option	Available Tenors	Default Tenor	Default Day Count Fraction	Additional Business Day Locations
USD-OIS-11:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
USD-OIS-11:00-LON-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
USD-OIS-11:00-NY-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
USD-OIS-3:00-BGCANTOR	All quoted tenors	N/A	Per ISDA 2006	N
USD-OIS-3:00-NY-ICAP	All quoted tenors	N/A	Per ISDA 2006	N
USD-Prime-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-Prime-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
USD-S&P Index-High Grade	All quoted tenors	N/A	Per ISDA 2006	N
USD-SIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
USD-SIBOR-SIBO	All quoted tenors	N/A	Per ISDA 2006	N
USD-SOFR-Compound	N/A	N/A	N/A	N
USD-SIFMA Municipal Swap Index	All quoted tenors	N/A	Per ISDA 2006	N
USD-TBILL-H.15	All quoted tenors	N/A	Per ISDA 2006	N
USD-TBILL-H.15-Bloomberg	All quoted tenors	N/A	Per ISDA 2006	N
USD-TBILL-Secondary Market	All quoted tenors	N/A	Per ISDA 2006	N
USD-TIBOR-ISDC	All quoted tenors	N/A	Per ISDA 2006	N
USD-TIBOR-Reference Banks	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-ICAP BrokerTec	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-SwapMarker100	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-SwapMarker99	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-T19901	All quoted tenors	N/A	Per ISDA 2006	N
USD-Treasury Rate-T500	All quoted tenors	N/A	Per ISDA 2006	N

Equity Index Requirements and Defaults

Date	Requirement	Default
Effective Date Business Day Convention		No Adjustment
Designated Maturities for Linear Interpolation		Tenors quoted next shorter and longer than the actual Calculation Period length

Mr. Christopher J. Kirkpatrick

December 9, 2022

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