

Macquarie F6 Equal Weights Backwardation Beta Index

**Index Manual
March 2020**

IMPORTANT INFORMATION

BASIS OF PROVISION

This document (the **Index Manual**) sets out the rules for the Macquarie F6 Equal Weights Backwardation Beta Index (the **Index**) and reflects the methodology for determining the composition and calculation of the Index (the **Methodology**).

The Methodology and the Index derived from this Methodology are the exclusive property of Macquarie Bank Limited (the **Index Administrator**). The Index Administrator owns the copyright and all other rights to the Index. They have been provided to you solely for your internal use and you may not, without the prior written consent of the Index Administrator, distribute, reproduce, in whole or in part, summarize, quote from or otherwise publicly refer to the contents of the Methodology or use it as the basis of any financial instrument.

SUITABILITY OF INDEX

The Index, and any financial instruments based on the Index may not be suitable for all investors and any investor must make an independent assessment of the appropriateness of any transaction in light of their own objectives and circumstances including the potential risks and benefits of entering into such a transaction. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice.

This Index Manual assumes the reader is a sophisticated financial market participant, with the knowledge and expertise to understand the financial mathematics and derived pricing formulae, as well as the trading concepts, described herein. Any financial instrument based on the Index is unsuitable for a retail or unsophisticated investor.

RISK FACTORS

See the risk factors relating to Macquarie indices in the document headed “Macquarie Indices – Risk Factors” provided to you with this Index Manual (the **Risk Factors**). Investors should note in particular the following sections of the Risk Factors: Part 1 (*General Risk Factors*) and Part 2.2 (*Commodity Indices*). A copy of the Risk Factors may be obtained free of charge upon request to the Index Administrator.

HISTORICAL DATA

The Index has been calculated since the Index Live Date but historical levels have been produced by a back-test process from the Index Start Date. For more information, see Section 7.3 (*Historical Values of the Index*).

CONFLICTS AND USE OF DISCRETION

For operational reasons the Index may, in limited circumstances, permit the exercise of discretion by the Index Calculation Agent (acting in good faith and in a commercially reasonable manner). For further information see Section 5.4 (*Discretion*).

For information on potential conflicts, see Section 6.3 (*Conflicts*).

CESSATION OR MODIFICATION OF THE INDEX

If you have been granted written consent by the Index Administrator to reference the Index in any contract or financial instrument, you should include in such contract or financial instrument robust fallback provisions to deal with cessation or material modification of the Index.

For information on corrections, changes and cessation of the Index, see Section 5 (*Corrections, Changes, Cessation and Discretion*).

DISCLAIMER OF LIABILITY

The Methodology is published for information purposes only and does not create any legally binding obligation on the part of the Index Administrator, the Index Calculation Agent and/or their affiliates. This document is intended to provide a summary of the Index it purports to describe. The Index Administrator expressly disclaims (to the fullest extent permitted by applicable law) all warranties (express, statutory or implied) regarding this document and the Methodology, or the Index, including but not limited to, all warranties of merchantability, fitness for a particular purpose (including investment by regulated funds) and all warranties arising from course of performance, course of dealing or usage of trade and their equivalents under applicable laws of any jurisdiction. In particular, the Index Administrator and the Index Calculation Agent do not warrant or guarantee the completeness or accuracy of the Index or timeliness of calculations of the Index Level and do not warrant or guarantee the availability of the Index Level on any particular date or at any particular time. The Index Administrator and the Index Calculation Agent shall have no liability to any person for delays, omissions or interruptions in the delivery of the Index, including as a result of the failure of prices to be published in respect of the Component or an underlying Contract or, as applicable, any other reference value for any reason.

Although the Index Calculation Agent will obtain information concerning the Component or Contracts and/or reference values from publicly available sources it believes to be reliable, it will not independently verify this information. Accordingly, no representation, warranty or undertaking (express or implied) is made by the Index Administrator or the Index Calculation Agent as to the accuracy and completeness of information concerning the Index.

In particular, the Index Administrator and the Index Calculation Agent shall not be liable (whether in contract, tort or otherwise) for any losses (including direct, indirect, special, punitive or other damages (including loss of profits)) resulting from (i) any determination that a Market Disruption Event or an Error has occurred or has not occurred, (ii) the timing relating to the determination that a Market Disruption Event or an Error has occurred, or (iii) any actions taken or not taken by the Index Calculation Agent or the Index Administrator as a result of a determination that a Market Disruption Event or an Error has occurred.

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SECTION 1: OVERVIEW

1.1 INTRODUCTION AND INDEX OBJECTIVE

The Macquarie F6 Equal Weights Backwardation Beta Index is designed as a rules based index to provide investment exposure to a diversified basket of commodity indices. The Index is designed to be readily accessible to market participants and is calculated daily in an Excess Return format.

The Index seeks to represent a replicable investment in a broad spectrum of commodities chosen based on global production with enough liquidity in order to replicate investment. Physical commodities are not easily investable on a direct and replicable basis. Futures contracts on commodities, however, represent a widely utilized synthetic proxy for direct investment in commodities. For this reason, the Index is constituted by, and reflects the price performance of, a basket of a broad spectrum of exchange traded futures contract relating to a physical commodity. Each futures contract relating to a physical commodity is a Component in the Index. In order to ensure the continuity of the Index, when the futures contract that underlies a Component of the Index approaches expiration, it will be replaced by an identical contract with a later expiration (the Component will 'roll' from one contract into the next). Each Component thus tracks a sequence of futures contracts relating to a single commodity (the universe of tradable calendar futures contracts on a commodity, known as the 'futures curve').

The Index equally weights its exposure across a subset of twelve commodities out of an investment universe of fourteen commodities. The subset of twelve commodities is chosen on a monthly basis by removing the least backwardated (or most contango) energy and industrial metal commodity from the selection universe.

Backwardation is the market condition where prices of futures contracts nearer to expiry (or the front of the futures curve) are higher than prices of futures contracts further from expiry (or the back of the futures curve). This can be caused by a number of factors depending on the asset class. In commodities, the shape of the futures curve is mainly affected by supply and demand conditions of the underlying commodity, with commodities where demand outpaces supply generally being in "backwardation" and those commodities which are oversupplied generally being in "contango" (the opposite of backwardation, with higher futures prices in the back of the futures curve than the front).

Backwardated commodities will typically incur a positive roll yield over time (as futures contracts are entered into at a lower price compared to the price at which the futures is rolled out of). By removing the least backwardated energy/industrial metals commodities, the index aims to capture a more positive (or less negative) roll yield over time.

1.2 INDEX CALCULATION

The Index is calculated and maintained by the Index Calculation Agent and supervised by the Index Administrator and the Index Oversight Committee, as described in Section 6 (*Oversight, Roles, Conflicts and Reviews*). All determinations with regard to the Index are made following the rules set out in this document, without discretion by the Index Administrator or the Index Calculation Agent, other than in the limited circumstances set out in this document – see Section 5 (*Corrections, Changes, Cessation and Discretion*) for further information.

The Index Level of the Index as of the Index Start Date is equal to the Initial Index Level. Thereafter, each Index Level is calculated as set out in Section 2 (*Index Methodology*).

The Index is not based upon submissions provided by third parties (or an affiliate of the Index Administrator or the Index Calculation Agent). The Index is based upon end-of-day settlement price data sourced from regulated markets and exchanges.

1.3 METHODOLOGY

The Methodology for calculating the Index is described in Section 2 (*Index Methodology*).

SECTION 2: INDEX METHODOLOGY

On a daily basis the Index replicates the return obtained by holding a basket of Components (each, a single commodity index) and rebalancing according to Section 2.1 (*Holdings Calculation*) of this Index Calculation section. The following sections detail how the Index Calculation Agent will calculate the daily Index Levels of the Index.

2.1 HOLDINGS CALCULATION

On any Index Business Day, t , each Component i has a Holding, $H_{i,t}$, associated with it. This Holding represents the proportion in which the Index Level will change when the level of that Component changes. In this section, the Holdings, $\{H_{1,t}, \dots, H_{n,t}\}$, calculations are outlined for any Index Business Day, t .

On the Holdings Calculation Date of the Index, the Holding of each Component i , is rebalanced in accordance with the Weighting Methodology set out in the Definitions section below.

TARGET HOLDINGS CALCULATION ON A HOLDINGS CALCULATION DATE

The calculation of the Target Holdings on a Holdings Calculation Date, R , requires as input the set of Weights in respect of that Holdings Calculation Date R and the Component Levels of the Components on the Index Business Day immediately preceding that Holdings Calculations Date, R .

On any Holdings Calculation Date, R , let the Weight of each Component i be denoted by $W_{i,R}$ so that $\{W_{1,R}, \dots, W_{n,R}\}$ are the Weights of the n Components in the Index as determined by the Weighting Methodology of the Index in respect of the Holdings Calculation Date, R . Analogously, let $\{C_{1,R-1}, \dots, C_{n,R-1}\}$ be the set of Component Levels of the Components on the Index Business Day immediately preceding the Holdings Calculation Date, R . The Index Target Holdings, $\{TH_{1,R}, \dots, TH_{n,R}\}$, for each of the n Components in the Index are calculated according to the formula below:

$$TH_{i,R} = I_{R-1} \times \frac{W_{i,R}}{C_{i,R-1}} \text{ for every Component } i = 1, \dots, n$$

Where I_{R-1} is the Index Level on the Index Business Day immediately preceding Holdings Calculation Date R .

DAILY HOLDINGS CALCULATION

In respect of any Index Business Day, t and any Component i , the Holding, $H_{i,t}$ of such Component i is calculated according to the following rules:

- (i) If such Index Business Day, t is an Index Rebalance Day in respect of Holdings Calculation Date R , the Holding, $H_{i,t}$ of the Component i in the Index is calculated according to the formula below:

$$H_{i,t} = H_{i,R} + \frac{k}{|IndexRebalanceDays|} \times (TH_{i,R} - H_{i,R}), \quad \forall k \in \{1..|IndexRebalanceDays|\}$$

Where:

$H_{i,R}$ is the Holding of Component i in respect of Holdings Calculation Date R
 $TH_{i,R}$ is the Target Holding of Component i in respect of Holdings Calculation Date R
 k is a number equal to the number of Index Rebalance Days immediately following (but excluding) the Holdings Calculation Date, R to (and including) such Index Business Day, t

$|IndexRebalanceDays|$ is the number of Index Rebalance Days

- (ii) On any Index Business Day, t that is not an Index Rebalance Day, the Holding, $H_{i,t}$ of each Component i on Index Business Day, t is set to be equal to the Holding, $H_{i,t-1}$ of that particular Component on the previous Index Business Day.

2.2 DAILY INDEX CALCULATION

The Index represents the performance of a synthetic, unfunded exposure to the Underlying Contracts in an Index, that is, the Index tracks what an investor would receive if it purchased or sold the futures contracts ultimately underlying the Index without taking into consideration the cost of investment capital. On each Index Business Day, t , the Index Level, I_t , is calculated (rounded to eight decimal places) based on the value of the Index on the preceding Index Business Day, I_{t-1} , and the change in level of each of the Components, according to the formula:

$$I_t = I_{t-1} + \sum_i H_{i,t} (C_{i,t} - C_{i,t-1})$$

Where:

I_t is the Index Level on the close of day t

$H_{i,t}$ is the Holding of Component i on the Index Business Day t

$C_{i,t}$ is the level of Component i on the Index Business Day t

$t-1$ is the Index Business Day immediately preceding Index Business Day t

The Index Start Date and the Initial Index Level, which is the value of the Index on the Index Start Date, are specified in the Section 4 (*Definitions*).

2.3 WEIGHTING METHODOLOGY

The Index equally weights its exposure across a subset of twelve commodities out of an investment universe of fourteen commodities. The subset of twelve commodities is chosen on a monthly basis by removing the least backwardated (or most contango) energy and industrial metal commodity from the selection universe.

Backwardated commodities will typically incur a positive roll yield over time (as futures contracts are entered into at a lower price, compared to the price at which such futures contracts are rolled out of). By removing the least backwardated energy/industrial metals commodities, the Index aims to capture a more positive (or less negative, as the case may be) roll yield over time.

The Weights Methodology is outlined in detail in the next sub-sections as follows:

- **Section 2.3.1** describes the Component Weights calculation.
- **Section 2.3.2** describes the calculation of Backwardation Signals that are needed to calculate the Component Weights, as described in Section 2.3.1.

2.3.1 COMPONENT WEIGHTS

The Weights of the Components are calculated in a two-step process:

- Component Selection:** this step describes the procedure for the selection of the Component subset to which the Index takes exposure.
- Weight Calculation:** this step describes the calculation of the Weights.

Step A – Component Selection

On each Holdings Calculation Date, R , the following selection process will be followed:

- The full selection universe of 14 Commodities (the **Full Set of Commodities**), as described in the table under the definition of “Components” in Section 4 (*Definitions*) is listed.
- The Backwardation Signal is calculated, as described in the Section 2.3.2 (*Backwardation Signals*), in respect of each Commodity in the Full Set of Commodities and such Commodities are ranked in order of Backwardation Signal, from highest to lowest.
- The Commodity for which the Sector (as described in the table in the definition of “Components” in Section 4 (*Definitions*)) is **Energy** that has the lowest Backwardation Signal is removed from the list of Commodities. If two or more Energy Commodities have the same lowest Backwardation Signal, the Energy Commodity that is last according to the alphabetical order of the Commodity names (as described in the table in the definition of “Components”) is removed from the list of Commodities.
- The Commodity which the Sector (as described in the table in the definition of “Components” in Section 4 (*Definitions*)) is **Industrial Metal** with the lowest Backwardation Signal is removed from the list of Commodities. If two or more Industrial Metal Commodities have the same lowest Backwardation Signal, the Industrial Metal Commodity that is last according to the alphabetical order of the Commodity names (as described in the table in the definition of “Components”) is removed from the list of Commodities.
- The resultant set of 12 Commodities (the **Selected Commodities**) is then used in the Weight calculation described in Step B below.

Step B – Weight Calculation

Following the determination of the Selected Commodities (in accordance with Step A above), the Selected Commodities are equally weighted and zero weights are assigned to the two Components whose Commodities have been excluded, as described below.

On each Holdings Calculation Date, R , the *Weight* $W_{i,R}$ corresponding to Component i is calculated as follows:

- (i) If such Component i is a Selected Commodity:

$$W_{i,R} = \frac{1}{12}$$

- (ii) If such Component i is not a Selected Commodity, then:

$$W_{i,R} = 0$$

2.3.2 BACKWARDATION SIGNALS

The Backwardation Signal is a measure of the degree of Backwardation observed for each Commodity. The higher the Backwardation Signal for a Commodity, the more the Commodity is backwardated. The lower the Backwardation Signal, the more the Commodity is contangoed.

For each Commodity i on a Holdings Calculation Date, R , the *Backwardation Signal* $S_{i,R}$ corresponding to such Commodity i is calculated according to the formula below:

$$S_{i,R} = \left(\frac{P_{i,R-1}^0}{P_{i,R-1}^{1Y}} \right)^{\frac{365.25}{ndays}} - 1$$

Where:

$P_{i,R-1}^0$ is the Settlement Price for the Front Month Contract on the Index Business Day immediately preceding Holdings Calculation Date, R . For the avoidance of doubt, the Front Month Contract is defined in respect of Index Business Day immediately preceding Holdings Calculation Date, R .

$P_{i,R-1}^{1Y}$ is the Settlement Price of the One-Year Ahead Contract on the Index Business Day immediately preceding Holdings Calculation Date, R . For the avoidance of doubt, the One-Year Ahead Contract is defined in respect of Index Business Day immediately preceding Holdings Calculation Date, R .

$ndays$ is the number of calendar days in between the Expiration of the One-Year Ahead Contract and the Expiration of the Front Month Contract

2.3.3 WORKED EXAMPLE

This section highlights the Backwardation Signal and Component Weight calculation for each Component for the January 2020 rebalance (15 Jan 2020):

Commodity	Sector	Front Month Contract	One-Year Contract	Front Sett. Price	1Y Sett. Price	Front Expiration	One-Year Expiration	ndays	Backwardation Signal	Selected Commodities	Weights	
C	Corn	Agriculture	CH20	CH21	389	413.75	13/03/2020	12/03/2021	364	-0.060017861	Corn	$\frac{1}{12}$
S	Soybeans	Agriculture	SH20	SH21	942.25	963	13/03/2020	12/03/2021	364	-0.021620437	Soybeans	$\frac{1}{12}$
SB	Sugar	Agriculture	SBH20	SBH21	14.32	14.7	28/02/2020	26/02/2021	364	-0.025937951	Sugar	$\frac{1}{12}$
W	Wheat (Chicago)	Agriculture	WH20	WH21	568.5	591.5	13/03/2020	12/03/2021	364	-0.039015084	Wheat (Chicago)	$\frac{1}{12}$
LC	Live Cattle	Livestock	LCG20	LCG21	126.85	123.75	28/02/2020	26/02/2021	364	0.025137602	Live Cattle	$\frac{1}{12}$
CL	WTI Crude Oil	Energy	CLG20	CLG21	58.23	54.7	21/01/2020	20/01/2021	365	0.06457942	WTI Crude Oil	$\frac{1}{12}$
CO	Brent Crude Oil	Energy	COH20	COH21	64.49	59.16	31/01/2020	29/01/2021	364	0.090417634	Brent Crude Oil	$\frac{1}{12}$
QS	Gas Oil	Energy	QSG20	QSG21	579.5	561.25	12/02/2020	11/02/2021	365	0.032539334		0
CL	Unleaded Gasoline	Energy	XBG20	XBG21	165.44	153.17	31/01/2020	29/01/2021	364	0.080392937	Unleaded Gasoline	$\frac{1}{12}$
LP	Copper	Industrial Metal	LPF20	LPF21	6269.5	6345	15/01/2020	20/01/2021	371	-0.011715797	Copper	$\frac{1}{12}$
LA	Aluminium	Industrial Metal	LAF20	LAF21	1781.71	1873.25	15/01/2020	20/01/2021	371	-0.048128098		0
LN	Nickel	Industrial Metal	LNF20	LNF21	13779.73	14083	15/01/2020	20/01/2021	371	-0.021204283	Nickel	$\frac{1}{12}$
LX	Zinc	Industrial Metal	LXF20	LXF21	2383.5	2351.5	15/01/2020	20/01/2021	371	0.013396018	Zinc	$\frac{1}{12}$
GC	Gold	Precious Metal	GCG20	GCG21	1544.6	1575.6	26/02/2020	24/02/2021	364	-0.019741938	Gold	$\frac{1}{12}$

SECTION 3: MARKET DISRUPTION EVENTS

The Index is comprised of a number of Components which are comprised of one or more futures contracts on a particular commodity. On any given Index Business Day, disruptions can occur that prevent these contracts from being traded. When this happens, it is necessary for the calculations of Index to be adjusted so that it remains replicable by market participants, i.e. adjustments must be made to the Index calculations to ensure that the Index Levels reflect contract prices that were attainable in the market at the times they would need to be traded in order to replicate the performance of the Index.

With respect to the daily calculation of the Index, a **Market Disruption Event** means the occurrence of one or more of the following events as determined by the Index Calculation Agent in its sole discretion:

- (i) a failure by the relevant Trading Facility to report or announce a Settlement Price for an Underlying Contract;
- (ii) all trading in an Underlying Contract of the Index is suspended and does not recommence at least ten minutes prior to the actual closing time of the regular trading session;
- (iii) the Settlement Price published by the relevant Trading Facility for one (or more) Underlying Contracts is a “limit price”, which typically means that the Trading Facility published settlement price for such Underlying Contract for a trading day has increased or decreased from the previous trading day’s settlement price by the maximum amount permitted under applicable rules of the Trading Facility;
- (iv) the index administrator of a Component fails to publish a Component Level in respect of an Index Business Day;
- (v) any other event, if the Index Calculation Agent reasonably determines in its sole discretion that the event materially interferes with the ability of the market participants to hedge the Index; or
- (vi) the occurrence of a Market Disruption Event in respect of an Underlying Contract that shares the same Commodity.

INDEX CALCULATION UNDER MARKET DISRUPTION EVENTS

When a Market Disruption Event occurs or is continuing on a particular Index Business Day, the Index Calculation Agent will determine the basket of futures contracts that is equivalent to the basket of Components that the Index represents, in respect of that Index Business Day. Once this basket is determined, the Index Calculation Agent will make such adjustments as are necessary to ensure the Index Levels reflect contract prices that were attainable in the market at the times they would need to be traded in order to replicate the performance of the Index, as described below:

If, on a Holdings Calculation Day *R* (hereinafter called the **Disrupted Holdings Calculation Day**), a Market Disruption Event with respect to one or more Underlying Contracts occurs (each such Underlying Contract a **Disrupted Contract** until the first Index Business Day on which no Market Disruption Event exists or is continuing in respect of that Underlying Contract), then the Index calculation for subsequent Index Business Days until the second consecutive non-disrupted Index Business Day will be modified as follows:

- (i) As long as a Market Disruption Event that occurred or was continuing on the Holdings Calculation Day *R* is continuing, the Excess Return Index Level will be calculated according to the following formula :

$$I_t = I_{t-1} + \sum_j H'_{j,t} (f_{j,t} - f_{j,t-1})$$

Where:

$H'_{j,t}$ is the Equivalent Holding for Underlying Contract *j* as calculated according to points (ii)-(v) below

$f_{j,t}$ is the Settlement Price of Underlying Contract *j* as of the Index Business Day *t*

- (ii) On the Disrupted Holdings Calculation Day, *R*, the Index Calculation Agent shall determine the Equivalent Holdings and the Equivalent Target Holdings with respect to the Index. The Equivalent Holdings is a set of holdings $\{H'_{1,R}, \dots, H'_{m,R}\}$ which corresponds to the Underlying Contracts $\{F_1 \dots F_m\}$ of the Index and perfectly describes the returns of the Index on the Disrupted Holdings Calculation Day, *R*. The Equivalent Target Holdings is a set of target holdings $\{TH'_{1,t}, \dots, TH'_{m,t}\}$ for the Underlying Contracts, which perfectly describes the returns of the Index on the Index Business Day immediately following the Disrupted Holdings Calculation Day, *R* had the Market Disruption Event(s) not occurred. The Equivalent Holdings are a representation of the basket of Underlying Contracts underlying the Index on the Disrupted Holdings Calculation Day, *R*, and the Equivalent Target Holdings are a representation of the basket of Underlying Contracts that will underlie the Index on the Index Business Day immediately following the Disrupted Holdings Calculation Day, *R* had the Market Disruption Event(s) not occurred. The Equivalent Holdings and the Equivalent Target Holdings shall be determined for all Underlying Contracts, therefore some $H'_{j,t}$ and/or $TH'_{j,t}$ may have a value of 0.

- (iii) On the Index Business Day, *t* immediately following the Disrupted Holdings Calculation Day, *R* and until all Market Disruption Events that occurred on the Disrupted Holdings Calculation Day have ceased, the Equivalent Holdings $\{H'_{1,t}, \dots, H'_{m,t}\}$ are calculated in accordance with the following formula:

$$H'_{j,t} = TH'_{j,R} + SCH_{j,t}$$

Where:

$TH'_{j,R}$ is the Equivalent Target Holding of Contract *j* on Disrupted Holdings Calculation Day, *R*

$SCH_{j,t}$ is: (a) if Contract *j* is not a Disrupted Contract, 0 or (b) if Contract *j* is a Disrupted Contract, an amount calculated in accordance with the following formula:

$$SCH_{j,t} = H'_{j,R} - TH'_{j,R}$$

$H'_{j,R}$ is the Equivalent Holding of Contract j on Disrupted Holdings Calculation Day, R

- (iv) For each Disrupted Contract, j , the Equivalent Holding, $H'_{j,t}$ shall be equal to the Equivalent Target Holding, $TH'_{j,t}$ on the first Index Business Day following the Disrupted Holdings Calculation Day, R , on which no Market Disruption Event in respect of that Contract, j occurs or is continuing. If a Market Disruption Event continues for more than 5 Index Business Days following the Disrupted Holdings Calculation Day, R , the Index Calculation Agent shall, in good faith and in a commercially reasonable manner, determine the levels of each Disrupted Component, j that will be used in the calculation of Holdings and index levels.
- (v) For each Underlying Contract that is not a Disrupted Contract, the Holding, $H_{j,t}$ on the Index Business Day immediately following the Disrupted Holdings Calculation Day shall be the Equivalent Target Holding.
- (vi) On the second consecutive non-disrupted Index Business Day immediately following a Disrupted Holdings Calculation Day, the Index Calculation Agent will resume calculation of the Index in accordance with Section 2.

SECTION 4: DEFINITIONS

Affected Index Level is defined in Section 5.1.1 (*Errors*).

Backwardation is a futures market when prices of futures contracts closest to expiry (front of the futures curve) are higher than prices of contracts with longer maturity (back of the futures curve).

Backwardation Signal is a numeric value assigned to each Commodity which is calculated in accordance with the Weighting Methodology and is directly proportional to the level of Backwardation for that Commodity.

Calculation Error is defined in Section 5.1.1 (*Errors*).

Commodity is each commodity corresponding to each Component, as specified in respect of each Component in the table under the definition of “Components” below.

Components are the single commodity indices specified in the table below:

Index Name	Ticker	Commodity	Sector
Macquarie Single Commodity Corn type A 6 month forward ER Index	MQSDC6E	Corn	Agriculture
Macquarie Single Commodity Soybeans type A 6 month forward ER Index	MQSDS6E	Soybeans	Agriculture
Macquarie Single Commodity Sugar type A 6 month forward ER Index	MQSDSB6E	Sugar	Agriculture
Macquarie Single Commodity Wheat (Chicago) type A 6 month forward ER Index	MQSDW6E	Wheat (Chicago)	Agriculture
Macquarie Single Commodity Live Cattle type A 6 month forward ER Index	MQSDLC6E	Live Cattle	Livestock
Macquarie Single Commodity WTI Crude Oil type A 6 month forward ER Index	MQSDCL6E	WTI Crude Oil	Energy
Macquarie Single Commodity Brent Crude Oil type A 6 month forward ER Index	MQSDCO6E	Brent Crude Oil	Energy
Macquarie Single Commodity Gas Oil type A 6 month forward ER Index	MQSDQS6E	Gas Oil	Energy
Macquarie Single Commodity Unleaded Gasoline type A 6 month forward ER Index	MQSDXB6E	Unleaded Gasoline	Energy
Macquarie Single Commodity LME Copper (LP) type A 6 month forward ER Index	MQSDLP6E	Copper	Industrial Metal
Macquarie Single Commodity Aluminium type A 6 month forward ER Index	MQSDLA6E	Aluminium	Industrial Metal
Macquarie Single Commodity Nickel type A 6 month forward ER Index	MQSDLN6E	Nickel	Industrial Metal
Macquarie Single Commodity Zinc type A 6 month forward ER Index	MQSDLX6E	Zinc	Industrial Metal
Macquarie Single Commodity Gold type A 6 month forward ER Index	MQSDGC6E	Gold	Precious Metal

The calculation and methodology of the Macquarie Single Commodity Indices is described in the “Macquarie Single Commodity Indices” Index Manual, which is available on request from the Index Administrator or at <http://static.macquarie.com/daffles/Internet/mgl/global/shared/corporate/trading-and-hedging/commodities/macquarie-single-commodity-indices.pdf>.

Component Level, in respect of an Index Business Day, is the closing level of each Component as determined by the Index Calculation Agent. If the Index Business Day is not a day on which the Component is scheduled to be published, the Component Level for that day will be the most recent available level for such Component on the most recent publication day.

Contango is a futures market when prices of futures contracts closest to expiry (or the front of the futures curve) are lower than prices of contracts with longer maturity (or the back of the futures curve).

Contract is a futures contract traded in a Trading Facility and having a commodity as underlying.

Designated Contract Month-Year is the Month/Year pair used in the name of each contract as established by the relevant Trading Facility and is typically the calendar month/year within which a futures contract can be settled by delivery or the calendar month/year in which the delivery period begins.

Error is defined in Section 5.1.1 (*Errors*).

Expiration is the date established as such by the relevant Trading Facility for each Contract and is typically the date on which trading on that particular Contract ceases.

First Notice Date is the date established as such for each contract by the relevant Trading Facility and is typically the first day on which notices of intent to deliver against futures market positions can be received.

Front Month Contract, on an Index Business Day, is the contract closest to Expiration but with the First Notice Date (if available) and the Expiration succeeding the current Index Business Day for which a Settlement Price can be obtained.

Input Error is defined in Section 5.1.1 (*Errors*).

Index Rebalance Days, in respect of a Holdings Calculation Date, is each day in the set of **five consecutive Index Business Days** starting on the Index Business Day immediately following that Holdings Calculation Date.

Holding, in respect of the Component and an Index Business Day, is a number which is determined by the Index Calculation Agent as described in Section 2.1 (*Holdings Calculation*) of the Index Calculation section above. The Holding in respect of the Component is determined in order to calculate the daily Index Level and represents the proportionate effect on the Index Level of a change in the relevant Component Level.

Holdings Calculation Date is the Index Business Day on which the Target Holdings are periodically calculated in order to rebalance the Holding of the Component back to the specified Weight. The Holdings Calculation Date is the tenth (10th) Index Business Day of each calendar month.

Index is defined in the section headed “Important Information”.

Index Administrator is defined in the section headed “Important Information”.

Index Business Days are the days in the Index Calendar.

Index Calculation Agent is defined in Section 6.2.2 (*Index Calculation Agent*).

Index Calendar is the set of trading days of the New York Mercantile Exchange (NYMEX) schedule.

Index Oversight Committee is defined in Section 6.1 (*Index Governance*).

Index Level is the daily level of the Index, including the historic back-tested levels, which is calculated according to the relevant section of this Methodology and published under the Index Ticker.

Index Live Date is 18 March 2020.

Index Start Date is 12 February 2004.

Index Ticker is **MQCP300E** Index (Bloomberg).

Initial Index Level is 100.

Material Error is defined in Section 5.1.1 (*Errors*).

Methodology is defined in the section headed “Important Information”.

One-Year Ahead Contract, on an Index Business Day, is the contract with Designated Contract Month-Year exactly one year ahead of the Designated Contract Month-Year of the Front Month Contract. If the Settlement Price of such contract cannot be obtained, the One-Year Ahead Contract on that Index Business Day is the contract closest to the Expiration for which a Settlement Price can be obtained, provided that its Designated Contract Month-Year exceeds the Designated Contract Month-Year of the Front Month Contract by at least one year. In the event that no such contract exists, the One-Year Ahead Contract will be the contract furthest to Expiration for which a Settlement Price can be obtained.

Selected Commodities, in respect of a Holdings Calculation Date, is the Commodity subset that is selected according to Section 2.3.1 for non-zero exposure.

Settlement Price, is the price, expressed in US dollars, published by the relevant exchange or trading facility and referred by them as the settlement price for that particular contract. If any Index Business Day is not a business day of the relevant exchange or trading facility, then the Settlement Price of that particular contract will be the most recent available price on the most recent business day of the relevant exchange or trading facility.

Trading Facility is each regulated futures exchange, facility or platform on or through which the Contracts underlying the Index are traded.

Underlying Contracts, in respect of an Index Business Day, are all Contracts which are, directly or indirectly, an underlying of the Index or, if that Index Business Day is a Holdings Calculation Date, scheduled to be an underlying of the Index according to the methodology of the Index or the Component Methodology.

Weight is the weight periodically established by the Weighting Methodology for the Component.

Weighting Methodology: is the weight allocation procedure detailed in Section 2.3 (*Weighting Methodology*).

SECTION 5: CORRECTIONS, CHANGES, CESSATION AND DISCRETION

5.1 CORRECTIONS AND ERROR HANDLING

5.1.1 Errors

Where the Index Administrator or the Index Calculation Agent becomes aware of an Input Error or a Calculation Error (an **Error**), the cause of such error will be investigated and steps taken, to the extent practicable and within the control of the Index Calculation Agent, to prevent such errors from recurring.

If an Error is not corrected by 11.59pm, New York time, on the Index Publication Day following the occurrence of the Error, the Index Calculation Agent shall determine whether such Error affects any published Index Level (such Error, a **Material Error** and each affected Index Level, an **Affected Index Level**).

Input Error means any error in input data that is detected by, or notified to, the Index Calculation Agent.

Calculation Error means any error in the implementation of the Methodology or arising in the Index calculation and dissemination process that is detected by or notified to the Index Calculation Agent.

5.1.2 Notification of Errors

The Index Calculation Agent shall publish an announcement regarding the occurrence of any Material Error and any change to the Methodology (see Section 5.2 (*Changes in Methodology*)).

5.1.3 Restatement of Index Levels

The Index Calculation Agent will restate any Affected Index Level resulting from a Material Error in the following circumstances:

- (1) in respect of a Material Error that is an Input Error:
 - (i) if the Index Calculation Agent becomes aware of such Input Error within 2 Index Publication Days of publication of the relevant Affected Index Level; or
 - (ii) otherwise, as determined by the Index Oversight Committee.
- (2) In respect of a Material Error that is a Calculation Error:
 - (i) if the Index Calculation Agent becomes aware of such Calculation Error prior within 30 calendar days following the Index Publication Day on which the first Affected Index Level was published; or
 - (ii) otherwise, as determined by the Index Oversight Committee.

5.2 CHANGES IN METHODOLOGY

Various factors, including external factors beyond the control of the Index Administrator, might necessitate material changes to an Index. The Index Manual contains information as of the date appearing on its cover, and such information may change from time to time. No assurance can be given that the Methodology reflects information subsequent to this date.

The Index Administrator may amend the Methodology at any time if the change is (i) of a formal, minor or technical nature, (ii) to correct any manifest or proven error or (iii) where the Index Calculation Agent determines that such change is not materially prejudicial to investors in financial products (in respect of which the Index Administrator has given consent to refer to the Index).

In any other case, a change to the Methodology will be considered to be a material change and may only be made subject to the approval of the Index Oversight Committee. The Index Oversight Committee shall determine the implementation timeline for such change and the timing for notification of such change to investors (which shall generally be at least 30 calendar days prior to implementation, but may be shorter if the Index Oversight Committee so determines) which the Index Administrator will communicate to investors by email.

5.3 CESSATION OF INDEX

The Index Administrator may withdraw the Index, at any time and without notice, if no financial instruments (in respect of which Macquarie Bank Limited has given consent to refer to the Index) are outstanding. The Index Administrator may, in any case (subject to the approval of the Index Oversight Committee), withdraw the Index, without reason, provided that either (i) it notifies all investors in financial instruments (in respect of which Macquarie Bank Limited has given consent to refer to the Index) of its intention to do so by email at least 30 calendar days prior to cessation of calculation and publication of the Index or (ii) all investors in financial instruments (in respect of which Macquarie Bank Limited has given consent to refer to the Index) have agreed to the cessation of the Index and the date of such cessation.

5.4 DISCRETION

In order to ensure continuity, the methodology of this Index permits the exercise of discretion or expert judgement in certain limited circumstances as set out in this Index Manual – See this Section 5 (*Corrections, Changes, Cessation and Discretion*).

The Index Calculation Agent or the Index Oversight Committee may also exercise discretion in the administration of the Index if an event or circumstance arises in respect of which there is no fallback provided for in the methodology of this Index and which the Index Calculation Agent or Index Oversight Committee determines prevents the Index Calculation Agent from determining the Index in the normal manner, constitutes a market disruption under the relevant Index Manual or the exercise of expert judgement or discretion is otherwise appropriate in the circumstances.

The Index Calculation Agent or the Index Oversight Committee may exercise any such discretion or expert judgement acting in good faith and in a commercially reasonable manner. Any exercise of discretion or expert judgement that the Index Calculation Agent determines will have a material effect on the Index shall be subject to the approval of the Index Oversight Committee.

SECTION 6: OVERSIGHT, ROLES, CONFLICTS AND REVIEWS

6.1 INDEX GOVERNANCE

The Index Administrator has established an independent oversight committee (the **Index Oversight Committee**) to review and oversee management of the Index and resolve any issues that arise. As of the date of this document, the Index Oversight Committee is comprised of the following designees, each an employee of Macquarie Bank Limited:

- A Managing Director in the Quantitative Investment Strategies team of the Commodities and Global Markets division;
- A Director from the Legal and Governance group;
- A representative from the Index Calculation Agent;
- A representative from the Risk division of the Risk Management Group;
- A representative from the Compliance division of the Risk Management Group; and
- A representative from the Business Operational Risk Management department within the Central division of the Commodities and Global Markets group.

Each member of the Index Oversight Committee is sufficiently knowledgeable about algorithmic indices and is required to act in good faith and in a commercially reasonable manner, provided that the Managing Director from the Commodities and Global Markets group will not be a voting member of the Committee, but shall act in an advisory capacity only. In giving approval to any adjustments made to the Index in accordance with this Index Manual, the Index Oversight Committee shall give due consideration to any equivalent decisions and actions taken by relevant trading venues or trade bodies.

The Index Oversight Committee has considered the features of the Index, the intended, expected or known usage of the Index and the materiality of existing or potential conflicts of interest and, taking these into account, has approved the Methodology and this Index Manual. The Index Oversight Committee is also charged with overseeing the daily management and operations of the Index. It will be available on an ad hoc basis for the consideration or approval of any relevant Adjustment Events, Regulatory Events, Errors, exercises of discretion, changes to the Methodology, any contemplated cancellation of the Index and the resolution of any other issues which arise in relation to the Index.

6.2 INDEX ADMINISTRATOR AND INDEX CALCULATION AGENT

6.2.1 Index Administrator

Macquarie Bank Limited is the Index Administrator. Notwithstanding anything to the contrary, the Index Administrator will maintain all ownership rights, expressed or otherwise, with respect to the Index, including the ability to license, sell or transfer any or all of its ownership rights with respect to the Index, including but not limited to terminating and appointing any successor Index Calculation Agent.

6.2.2 Index Calculation Agent

The Index Calculation Agent is appointed by the Index Administrator to calculate and maintain each Index from and until such time that the Index Administrator terminates its relationship with the current Index Calculation Agent and appoints a successor index calculation agent. Any such termination or appointment of a successor will be subject to the approval of the Index Oversight Committee.

The Index Calculation Team within the Commodities and Global Markets division of Macquarie Bank Limited acts as index calculation agent (the **Index Calculation Agent**) in respect of the Index as of the date of this Manual. The methodology employed by the Index Calculation Agent in determining the composition and calculation of the Index is set out in the calculations and procedures described in this document.

6.2.3 Relationship of the Index Administrator and the Index Calculation Agent

The Index Calculation Agent is appointed by the Index Administrator, subject to the approval of the Index Oversight Committee. While, as of the date of publication of these rules, both the Index Administrator and the Index Calculation Agent form part of Macquarie Bank Limited, they are independent teams within the bank and the employees discharging the obligations of the Index Calculation Agent have separate lines of reporting and accountability from the employees performing the functions of the Index Administrator.

6.2.4 Not acting as a fiduciary

Neither the Index Administrator nor the Index Calculation Agent owes any duty of care or acts as agent of another person in respect of its respective obligations in relation to the Index as set out in this Index Manual.

6.3 CONFLICTS

The Index is based on underlying assets, as described in the Methodology, as applicable. The Index Administrator and/or its affiliates actively trade these underlying assets and options on these underlying assets. The Index Administrator and/or its affiliates also actively enter into or trade and market securities, swaps, options, derivatives, and related instruments which are linked to the performance of these underlying assets or are linked to the performance of the Index. The Index Administrator and/or its affiliates may underwrite or issue other securities or financial instruments indexed to the Index, and the Index Administrator or its affiliates may license the Index for publication or for use by unaffiliated third parties. These activities could present conflicts of interest and could affect the value of the Index. The Index Administrator trades or may trade as principal in instruments (or related derivatives) linked to an index described in this document and may have proprietary positions in the instruments (or related derivatives). The Index Administrator may make a market in such instruments (or related derivatives), which may in extreme circumstances affect the levels of the Index described.

The Index Administrator, the Index Calculation Agent and the business unit which creates instruments linked to the Index are all businesses or entities of Macquarie. Steps have been taken to manage and mitigate the inherent conflicts of interest which result, including the establishment of separate reporting lines for the respective roles, establishment of an independent Index Oversight Committee and the implementation and enforcement of policies and procedures to ensure that appropriate controls are in place.

Certain activities conducted by the Index Administrator may conflict with interests of investors in the Index. Such activities could include (but are not limited to) providing or participating in competing products (such as financial instruments linked to the Index, a Component or a similar index or component) and hedging its exposure to the Index. The Index Administrator could receive substantial returns in respect of such activities, which will not be passed on to any investors in products linked to the Index; whereas the value of investments linked to the Index may decline. Any such activities conducted by the Index Administrator around the time of a rebalancing could adversely impact the performance of the Index and therefore the level of a concurrent rebalancing.

The Index Administrator may have access to information relating to the Index, a Component or investments linked to a Component. The Index Administrator is not obliged to use that information for the benefit of any person entering into products linked to the Index.

6.4 REVIEWS

The Index Administrator has procedures in place to review a sample of its Indices (which may not include this Index) on an annual basis (or more frequently, if it determines appropriate). In determining the sample of Indices to review, the Index Administrator may consider any factors, which may include a particularly negative performance as compared with expectation or a high volume of errors or restatements. The Index Administrator shall submit a report on its reviews to the Index Oversight Committee. If the Index Administrator determines that changes are required to a methodology, the Index Oversight Committee shall review the changes the reasons therefor. Any such changes approved by the Index Oversight Committee shall be implemented in accordance with Section 5.2 (*Changes in Methodology*).

SECTION 7: GENERAL INFORMATION

7.1 VALUATION AND CALCULATIONS

The Index Calculation Agent shall, unless stated otherwise, perform all calculations in this Index Manual. It shall perform such calculations in its sole and absolute discretion, acting in good faith and in a commercially reasonable manner. All such calculations shall be subject to the Index Calculation Agent's policies and procedures and will (in the absence of manifest error) be final, conclusive and binding. Neither the Index Calculation Agent nor the Index Administrator shall have any liability for errors or omissions made in good faith.

7.2 PUBLICATION OF INDEX LEVEL

The publication of the Index Level by the Index Calculation Agent for an Index Publication Day follows a publication cycle which ends at the Publication Time for such day. Any Index Level published before the Publication Time in respect of a day is indicative and may be restated up to and including the Publication Time.

In respect of an Index Publication Day, the Index Level as published by the Index Calculation Agent on the Bloomberg Ticker at the Publication Time for such day shall be the official Index Level and shall in each case be final and binding (save for changes made pursuant to Section 5 (*Corrections, Changes, Cessation and Discretion*)). See Section 5.1.2 regarding the publication of Material Errors.

Publication Time means, in respect of an Index Publication Day, 23:59:59 (New York Time) on the Index Publication Day immediately following such Publication Business Day.

7.3 HISTORICAL VALUES OF THE INDEX

Hypothetical back-tested historical values of the Index are not indicative of future performance. The Index Administrator makes no representation as to the accuracy or appropriateness of, and shall have no liability to you or any other entity for any loss or damage, direct or indirect, arising from the use of the historical values.

SECTION 8: NOTICES AND DISCLAIMERS

8.1 REGULATORY STATUS

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8.2 NOT RESEARCH OR AN OFFER

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This document does not constitute a prospectus, offer, invitation or solicitation to buy or sell financial instruments and is not intended to provide the sole basis for any evaluation of the securities or any other financial instruments which may be discussed within, referred to or based upon the Index. Any offering or potential transaction that may be related to the Index will be made separately and subject to distinct documentation and in such case the information contained herein may be superseded in its entirety by such documentation in final form.

8.3 THIRD-PARTY DISCLAIMER

The Index is not endorsed, sponsored or promoted by the issuer or sponsor of any Component of underlying asset of any Component.