

Macquarie Roll Variation Single Commodity (USD) Indices

**Index Manual
February 2022**

IMPORTANT INFORMATION

BASIS OF PROVISION

This document (the **Index Manual**) sets out the rules for the Macquarie Roll Variation Single Commodity (USD) Indices (each, an **Index**) and reflects the methodology for determining the composition and calculation of each Index (the **Methodology**). The Methodology and each 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 Indices. 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.

For the purposes of the remainder of this document, each reference to the Index in singular form shall be interpreted as being applicable to each Index covered by this Index Manual.

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 Proprietary Indices – Risk Factors” on the following website: <https://www.macquarie.com/uk/en/about/company/commodities-and-global-markets/commodities/commodity-index-documentation.html> (the **Risk Factors**). Investors should note in particular the following sections of the Risk Factors: Part 1 (*General Risk Factors*), Part 2.2 (*Commodity Indices*) and Part 2.3 (*Single Futures Indices*).

HISTORICAL DATA

The Index has been calculated from the Index Live Date but historical Index levels (prior to the Index Live Date) have been produced by a back-test process from the Index Start Date. For more information, see Section 8.3 (*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 6.4 (*Discretion*).

For information on potential conflicts, see Section 7.3 (*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 6 (*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 any Index Level and do not warrant or guarantee the availability of any 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 any Index, including as a result of the failure of prices to be published in respect of any Component or, as applicable, any other reference value failing to trade for any reason. Although the Index Calculation Agent will obtain information concerning Components 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 any 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, an Adjustment Event or an Error has occurred or has not occurred, (ii) the timing relating to the determination that a Market Disruption Event, an Adjustment 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, an Adjustment Event or an Error has occurred.

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SECTION 1: OVERVIEW

1.1 INTRODUCTION AND INDEX OBJECTIVE

Each Index aims to provide a return based on a notional investment in futures contracts (each, a **Component**) on an individual commodity (a **Commodity**). Physical commodities are not easily investable on a direct and replicable basis. However, futures contracts on commodities represent a widely utilized synthetic proxy for direct investment in commodities. For this reason, each Index is constituted of, and reflects the price performance of, a Component comprised of a notional exchange traded futures contract (a **Contract**) relating to a physical commodity. In order to ensure the continuity of each Index, when the Contract that underlies a Component of an Index approaches expiration, it will be replaced by an identical Contract with a later expiration (which process is referred to as the Index “rolling” from one Contract into the next Contract). Each Index thus synthetically tracks a sequence of Contracts relating to a Commodity (the universe of tradable calendar futures contracts on a Commodity, known as the “futures curve”). Accordingly, each Index will represent systematic and replicable benchmarks for investment in an individual Commodity.

Each Index replicates the returns obtained by holding a Component (or, during a Roll Period, more than one Component) that represents a specified Contract (or, during a Roll Period, more than one Contract) from one Index Business Day to the next. The Contract(s) associated with each Index will change through time, with Contracts being removed and added according to the Methodology described in Section 2 (*Index Methodology*).

The Indices are designed to be replicable and are calculated daily in either an excess return, total return or spot return format (depending on the Index Type specified for each Index in the Index Specifications). The spot return format is not replicable, but useful to assess the historic realized roll yields (the returns associated with the rolling of exposure from contracts approaching expiry to further out contracts).

To facilitate an understanding of the calculations, the Methodology contains certain worked examples which demonstrate the types of calculations needed to calculate the level of an Index on a particular date – See Section 2 (*Index Methodology*).

1.2 INDEX CALCULATION

The Indices are calculated and maintained by the Index Calculation Agent and supervised by the Index Administrator and the Index Oversight Committee, as described in Section 7 (*Oversight, Roles, Conflicts and Reviews*). All determinations with regard to the Indices 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 6 (*Corrections, Changes, Cessation and Discretion*) for further information.

In respect of each Index, the Index Level as of the Index Start Date is equal to the Index Start Level specified in Section 4 (*Definitions*). Thereafter, each Index Level is calculated as set out in Section 2 (*Index Methodology*).

The Indices are not based upon submissions provided by third parties (or an affiliate of the Index Administrator or the Index Calculation Agent). The Indices are based upon actual transaction data sourced from regulated markets and exchanges.

1.3 INDEX SPECIFICATIONS

Each Index is differentiated by the Index Specifications corresponding to that Index. The Index Specifications set out (i) certain parameters specific to an Index (such as the Index Name, Bloomberg Ticker, the Index Calendar, the Index Start Date and the Index Start Level), (ii) the Commodity on which such Index is based, (iii) the parameters that determine the timing of rolling from one Contract into the next Contract (i.e. the Roll Start Date and the Roll Length), (iv) the calendar contracts that the Index will roll into (i.e. the Static Contract Roll Schedule) and (v) the Index Type, which defines the method of calculating the Index Level (as described in Section 2.2 (*Index Level Calculation*)). Accordingly, the Index Specifications determine exposure to a particular part of the futures curve of a commodity and the Index will reflect the performance of such point on the curve.

The Index Administrator may, at any time, commence calculation and publication of new Indices pursuant to the Methodology. In such circumstances the Index Administrator will publish a revised version of the Methodology, revised only to augment Annex A (*Index Specifications*) with the new Index Specifications relating to the new Indices.

1.4 METHODOLOGY

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

To facilitate an understanding of the calculations, the Methodology contains certain worked examples, which demonstrate the types of calculations needed to calculate the Index Level on a particular date – see Sections 2.1 and 2.2.

SECTION 2: INDEX METHODOLOGY

On a daily basis, each Index seeks to replicate synthetically the returns obtained by notionally holding a Component (or, during a Roll Period, more than one Component) that represents a specified Contract (or, during a Roll Period, more than one Contract) from one Index Business Day to the next. The Contract(s) associated with each Index will change through time, with Contracts being removed and added according to a calendar month contract schedule that is part of the set of parameters specified in its Index Specification, as described in more detail in Section 2.1 (*Roll Weights Calculation*) below.

The following sections detail how the Index Calculation Agent will calculate the Index Level of each Index on each Index Business Day, based on the inputs set out in the relevant Index Specifications.

Section 2.1 (*Roll Weights Calculation*) describes how the weights of the new Contract and the expiring Contract are determined; and

Section 2.2 (*Index Level Calculation*) describes the daily calculation of the Index Level.

2.1 ROLL WEIGHTS CALCULATION

Futures contracts have fixed expiry dates, after which trading comes to an end. In order to accurately reflect a financial investment in a physical commodity, futures contracts are removed from the basket which is tracked by the Index prior to their expiry in a process called “rolling” the futures contracts.

In respect of an Index and a calendar month, Contracts are rolled at the close of each business day and over a set of Index Business Days consisting of the period starting from, and including, the applicable Roll Start Date and such calendar month, and lasting for the number of Index Business Days represented by the applicable Roll Length (the **Roll Period**). Rolling entails adjusting the Contracts the Index references to reduce exposure to the Contract which is scheduled to expire (the **Contract Rolling Out**, as more particularly defined in Section 4 (*Definitions*)) and increase exposure to a further dated Contract (the **Contract Rolling In**, as more particularly defined in Section 4 (*Definitions*)). Thus, during the Roll Period the Index will reference more than one Contract, with the proportion of exposure to each Contract changing on the close of each business day. This is achieved by applying a weight (the **Roll Weight**) to each Contract, which will change throughout the Roll Period to reflect the changing composition of Contracts associated with the Index.

The Roll Weight allocates exposure between the Contract Rolling Out and the Contract Rolling In on each Index Business Day. The Roll Weight, RW_t , in respect of an Index Business Day, t , is calculated according to the following formula:

(A) If the Index Business Day, t , is outside a Roll Period:

$$RW_t = 1$$

(B) If the Index Business Day, t , is during a Roll Period:

$$RW_t = RW_{t-1} - RF$$

Where:

RW_{t-1} is the Roll Weight in respect of Index Business Day, t-1; and

RF (or Roll Fraction) in respect of an Index, means the fraction of exposure rolled out of the Contract Rolling Out and rolled into the Contract Rolling In on each Index Business Day of the Roll Period. The Roll Fraction is equal to the inverse of the Roll Length of such Index.

- (C) If a Market Disruption Event occurs on such Index Business Day, t, then each Contract will have its roll postponed, as described in Section 3.2 (*Roll Weight Calculation under Market Disruption Events*).

Worked Example of Roll Weights Calculation:

For example, the Macquarie Single SGX Iron Ore 62% (SCO) Quarterly Roll 1 ER Index has a Roll Period that starts on Business Day 5 and has a Roll Length of fifteen (15) Index Business Days.

The Roll Weights calculations for November 2019 are then calculated as follows:

	Date	Business Day during Roll Period	Roll Weight (RW_t)	Contract Rolling Out	Contract Rolling In
	04-Nov-19	2	1	SCOZ19	SCOH20
	05-Nov-19	3	1	SCOZ19	SCOH20
	06-Nov-19	4	1	SCOZ19	SCOH20
Roll Period (Business Day 5 to 19)	07-Nov-19	5	0.9333333	SCOZ19	SCOH20
	08-Nov-19	6	0.8666667	SCOZ19	SCOH20
	11-Nov-19	7	0.8	SCOZ19	SCOH20
	12-Nov-19	8	0.7333333	SCOZ19	SCOH20
	13-Nov-19	9	0.6666667	SCOZ19	SCOH20
	14-Nov-19	10	0.6	SCOZ19	SCOH20
	15-Nov-19	11	0.5333333	SCOZ19	SCOH20
	18-Nov-19	12	0.4666667	SCOZ19	SCOH20
	19-Nov-19	13	0.4	SCOZ19	SCOH20
	20-Nov-19	14	0.3333333	SCOZ19	SCOH20
	21-Nov-19	15	0.2666667	SCOZ19	SCOH20
	22-Nov-19	16	0.2	SCOZ19	SCOH20
	25-Nov-19	17	0.1333333	SCOZ19	SCOH20
	26-Nov-19	18	0.0666667	SCOZ19	SCOH20
	27-Nov-19	19	0	SCOZ19	SCOH20
	29-Nov-19	20	1	SCOH20	SCOH20
	02-Dec-19	1	1	SCOH20	SCOH20
	03-Dec-19	2	1	SCOH20	SCOH20
	04-Dec-19	3	1	SCOH20	SCOH20
	05-Dec-19	4	1	SCOH20	SCOH20

Established market practice is that indices based on futures contracts are rolled over multiple days, generally starting on the fifth (5th) Index Business Day of each month and continuing over five (5) days. This convention may be changed in order to obtain exposure to specific market mechanics, for example rolling over more than five days in order to further lessen the exposure of the roll to market movements on any one particular day.

2.2 INDEX LEVEL CALCULATION

The Index is available in Excess Return, Total Return and/or Spot Return format based on the Index Type, as defined in the relevant Index Specification (ER – Excess Return, TR – Total Return, SR – Spot Return). The level of an Index (the **Index Level**) will be calculated based on the Index Type and will either be the Excess Return Index Level (I_t), the Total Return Index Level (TI_t) or the Spot Return Index Level (SI_t) (as applicable), each calculated as set out below.

2.2.1 Excess Return Calculation

An Index with the Index Type specified as Excess Return (an **Excess Return Index**) represents the performance of a synthetic, unfunded exposure to the Contracts in such Index; that is, the Index tracks what an investor would receive if it purchased or sold the futures contracts underlying the Index without taking into consideration the cost of investment capital.

On an Index Business Day, t , the level of an Excess Return Index (the **Excess Return Index Level**, I_t) is calculated (rounded to eight decimal points) based on the Index Level on the immediately preceding Index Business Day, I_{t-1} , and the Index Daily Return, IDR_t (as defined below), according to the following formula:

$$I_t = I_{t-1} \times (1 + IDR_t).$$

The **Index Daily Return**, IDR_t , is calculated according to the following formula:

$$IDR_t = \frac{RW_{t-1} \times HRO_{t-1} \times PRO_t + (1 - RW_{t-1}) \times HRI_{t-1} \times PRI_t}{RW_{t-1} \times HRO_{t-1} \times PRO_{t-1} + (1 - RW_{t-1}) \times HRI_{t-1} \times PRI_{t-1}} - 1$$

Where:

RW_{t-1}	is defined in Section 2.1 (<i>Roll Weights Calculation</i>);
HRO_{t-1}	is the Holding Rolling Out, in respect of the Index Business Day, $t-1$;
Holding Rolling Out	in respect of an Index and an Index Business Day, is a multiplier equal to 1. The Holding Rolling Out represents the exposure of the Index to the Contract Rolling Out;
HRI_{t-1}	is the Holding Rolling In, in respect of Index Business Day, $t-1$;
Holding Rolling In	in respect of an Index and an Index Business Day, is a multiplier equal to 1. The Holding Rolling In represents the exposure of the Index to the Contract Rolling In;
PRO_t	is the Contract Price on Index Business Day, t of the Contract Rolling Out in respect of Index Business Day, $t-1$;

PRI_t	is the Contract Price on Index Business Day, <i>t</i> of the Contract Rolling In in respect of Index Business Day, <i>t</i> -1;
PRO_{t-1}	is the Contract Price on Index Business Day, <i>t</i> -1 of the Contract Rolling Out in respect of Index Business Day, <i>t</i> -1; and
PRI_{t-1}	is the Contract Price on Index Business Day, <i>t</i> -1 of the Contract Rolling In in respect of Index Business Day, <i>t</i> -1.

2.2.2 Total Return Calculation

An Index with the Index Type specified as Total Return (a **Total Return Index**) represents a synthetic, funded exposure to the Contracts in an Index; that is, the Index tracks what an investor would receive if it purchased or sold the futures contracts underlying the Index, and simultaneously invested, at a risk-free rate, a USD sum of money equal to the aggregate notional associated with all bought futures contracts. On an Index Business Day, *t*, the level of the Total Return Index (the **Total Return Index level**, *TI_t*) is calculated (rounded to eight decimal points) based on the value of the Total Return Index in the preceding Index Business Day, *TI_{t-1}*, the Index Daily Return, *IDR_t*, and the **Collateral Return**, *CR_t*, according to the formula:

$$TI_t = TI_{t-1} \times (1 + IDR_t + CR_t)$$

$$CR_t = \left[\frac{1}{1 - \frac{91}{360} \times TBAR_{t-1}} \right]^{days/91} - 1$$

Where:

TBAR_{t-1}	is the Treasury Bill Rate of the most recent weekly US Treasury Bill auction prior to the Index Business Day, <i>t</i> ; and
days	is the number of calendar days between the Index Business Day <i>t</i> and the Index Business Day, <i>t</i> -1.

2.2.3 Spot Return Calculation

An Index with the Index Type specified as Spot Return (a **Spot Return Index**) is not replicable, but it is useful to assess the historic realized roll yields (the returns associated with the rolling of exposure from contracts approaching expiry to further out contracts). When a futures market is in backwardation (higher prices at the front of the futures curve compared to more deferred contracts), the roll yields tend to be positive. The opposite tends to be true (negative roll yields) when the futures market is in contango (with higher deferred prices compared to the front). By comparing the returns of the Spot Return Index with the returns of the Excess Return Index, the historic realised roll yields can be approximated as the difference between the Excess Return and the Spot Return.

On an Index Business Day, *t*, the level of the Spot Return Index (the **Spot Return Index Level**, *SI_t*) is calculated (rounded to eight decimal points) based on the value of the Spot Return Index on Index Business Day, *t*-1, *SI_{t-1}* and the Spot Index Daily Return, *SIDR_t* (as defined below), according to the following formula:

$$SI_t = SI_{t-1} \times (1 + SIDR_t).$$

The **Spot Index Daily Return**, $SIDR_t$, is calculated according to the following formula:

$$SIDR_t = \frac{RW_t \times PRO_t + (1 - RW_t) \times PRI_t}{RW_{t-1} \times PRO_{t-1} + (1 - RW_{t-1}) \times PRI_{t-1}} - 1$$

Where:

RW_t	is defined in Section 2.1 (<i>Roll Weights Calculation</i>); provided that, in respect of an Index Business Day t for which Index Business Day, $t - 1$, is the last day of a Roll Period, the definition of RW_t in Clause 2.1 shall not apply and RW_t shall be equal to RW_{t-1} ;
RW_{t-1}	is defined in Section 2.1 (<i>Roll Weights Calculation</i>);
PRO_t	is the Contract Price on Index Business Day t of the Contract Rolling Out in respect of Index Business Day, $t - 1$;
PRI_t	is the Contract Price on Index Business Day t of the Contract Rolling In in respect of Index Business Day, $t - 1$;
PRO_{t-1}	is the Contract Price on Index Business Day, $t - 1$ of the Contract Rolling Out in respect of Index Business Day, $t - 1$; and
PRI_{t-1}	is the Contract Price on Index Business Day, $t - 1$ of the Contract Rolling In in respect of Index Business Day, $t - 1$.

The Index Start Date of an Index and the Index Start Level, which is the Index Level in respect of the Index Start Date, are defined in the Index Specifications.

2.2.4 Worked Example of Index Level Calculation

For example, for the Macquarie Single SGX Iron Ore 62% (SCO) Quarterly Roll 1 ER Index, which has an Index Type of Excess Return (ER), the Index Level calculation in respect of 26 November 2019 is calculated in accordance with Section 2.2.1 (*Excess Return Calculation*) as follows:

- The immediately preceding Index Business Day is 25 November 2019
- The Contract Rolling out is the December 2019 Iron Ore contract
- The Contract Rolling in is the March 2020 Iron Ore contract
- The Roll Weight in respect of 25 November 2019 is 0.13333333333333
- The Holding Rolling Out and Holding Rolling In are equal to 1
- The Index Level in respect of 25 November 2019 is 252.71079260
- The prices for the Contract Rolling Out and the contract Rolling In are as follows:

	Contract Rolling Out	Contract Rolling In
25 Nov 2019	89.08	83.9
26 Nov 2019	87.12	82.34

- The calculation of the Excess Return Index Level is therefore:

$$\frac{87.12 \times 1 \times 0.133333333333 + 82.34 \times 1 \times 0.866666666667}{89.08 \times 1 \times 0.133333333333 + 83.9 \times 1 \times 0.866666666667} - 1$$

$$= -0.019072238071970$$

The Excess Return Index Level in respect of 26 November 2019 is therefore, 247.89103220.

SECTION 3: MARKET DISRUPTION EVENTS

Each Macquarie Roll Variation Single Commodity (USD) Index is comprised of one or more Contracts on a particular Commodity (the **Underlying Contracts**). 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 the affected 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.

During a Roll Period, this is generally achieved by delaying any changes to the composition of each affected Index. On any other Index Business Day, given replication of an Index does not require trading of Contracts on such days, in the event that a price is not available for a Contract, a price will be appropriately substituted in order for the calculations in respect of a particular Index Business Day to take place.

3.1 MARKET DISRUPTION EVENTS

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

- (i) a failure by the relevant Trading Facility to report or announce a settlement price for an Underlying Contract (including each Index Business Day on which the Trading Facility is not open for business);
- (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 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; or
- (iv) any other event, if the Index Administrator reasonably determines that the event materially interferes with the ability of market participants to hedge the Index.

3.2 ROLL WEIGHT CALCULATION DURING MARKET DISRUPTION EVENTS

If a Market Disruption Event occurs during a Roll Period, the approach taken by the Index Calculation Agent is to delay changes to the Index composition until the Market Disruption Event affecting the Index has concluded, provided that in the event that a Market Disruption Event continues for multiple days, the Index Calculation Agent will make a good faith determination in respect of the market price to be attributed to the affected Underlying Contracts.

If, on an Index Business Day during a Roll Period, t , a Market Disruption Event occurs, then each Underlying Contract affected by the Market Disruption Event will have its roll postponed according to the following methodology:

- (i) For each Commodity i not affected by the Market Disruption Event, the Roll Weight, $RW_{i,t}$ is defined in the usual course, as in Section 2.1 (*Roll Weights Calculation*).
- (ii) For each Commodity i affected by the Market Disruption Event, the Roll Weight, $RW_{i,t}$, will be set equal its previous value, i.e., $RW_{i,t} = RW_{i,t-1}$.
- (iii) Where the Roll Type of the Index is specified in Annex A (*Index Specifications*) as:
 - (a) Extend, the Roll Weight on subsequent Index Business Days not affected by such Market Disruption Event will be determined without taking into account the Index Business Days on which such Market Disruption Event occurred or was continuing; or
 - (b) Recoup, the postponed portion of the roll in (ii) above will roll on the first Index Business Day not affected by a Market Disruption Event.

In the event that the Roll Period ends without the Roll Weight being fully redistributed into the Contract Rolling In, then the Roll Period is extended until there is no Market Disruption Event, provided that if the Roll Period is extended to include the Market Disruption Longstop Date and the Market Disruption Event is still continuing on such Market Disruption Longstop Date, then a Market Disruption Adjustment Event shall occur and the Index Calculation Agent may take action in accordance with Section 5.1 (*Adjustment Events*).

Where **Market Disruption Longstop Date** means the date determined by the Index Calculation Agent (subject to approval by the Index Oversight Committee) on which the Market Disruption Event shall be deemed to end for the purpose of determining the Index Level. In determining the Market Disruption Longstop Date, the Index Calculation Agent (and the Index Oversight Committee) may take into account factors including (but not limited to) the objective of the Index, the expiry date of the Underlying Contract affected by the Market Disruption Event and market practice.

SECTION 4: DEFINITIONS

Adjustment Event is defined in Section 5.1 (*Adjustment Events*).

Affected Index Level is defined in Section 6.1.1 (*Errors*).

Asset Class Specific Adjustment Event is defined in Section 5.2 (*Asset Class Specific Definitions – Adjustment Events*).

Bloomberg Ticker, in respect of an Index, is the ticker under which the relevant Index Level will be published, as specified in the relevant Index Specifications.

Calculation Error is defined in Section 6.1.1 (*Errors*).

Change in Economic Assumptions is defined in Section 5.1 (*Adjustment Events*).

Collateral Return is defined in Section 2.2.2 (*Total Return Calculation*).

Commodity is defined in Section 1.1 (*Introduction and Index Objective*) and, in respect of an Index, is the physical commodity that underlies the Contract referenced by the Index, as specified in the relevant Index Specifications.

Component, in respect of an Index, is defined in Section 1.1 (*Introduction and Index Objective*) and means each Contract.

Component Change Event is defined in Section 5.1 (*Adjustment Events*).

Component Licensing Event is defined in Section 5.1 (*Adjustment Events*).

Contract is defined in Section 1.1 (*Introduction and Index Objective*) and, in respect of an Index, is a futures contract traded on the Trading Facility of such Index and having a Commodity as underlying.

Contract Change Event is defined in Section 5.2 (*Asset Class Specific Definitions – Adjustment Events*).

Contract Prices, in respect of an Index Business Day, are the prices of the Contract Rolling In and the Contract Rolling Out, published by the relevant Trading Facility and referred to by the Trading Facility as the settlement price for that particular Contract. If the Index Business Day is not a trading day of the relevant Trading Facility, then the Settlement Price of that particular Contract will be the most recent available price on the most recent Index Business Day.

Contract Rolling In, in respect of a Commodity on an Index Business Day, is the Contract specified in the Static Contract Schedule Table of the Index Specification for the calendar month immediately following — with January following December — the calendar month with which the upcoming Roll Period (relative to that particular Index Business Day) is associated. The Contract Rolling In represents the Contract to which the Index is exposed during and subsequent to the Roll Period in which the Index rolls its exposure from the Contract Rolling Out to the Contract Rolling In.

Contract Rolling Out, in respect of a Commodity on an Index Business Day, is the Contract specified in the Static Contract Schedule Table of the Index Specification for the calendar month with which the upcoming Roll Period (relative to that particular Index Business Day) is associated. The Contract Rolling Out

represents the Contract to which the Index is exposed prior to and during the Roll Period in which the Index rolls its exposure from the Contract Rolling Out to the Contract Rolling In.

Dealer is defined in Section 5.1 (*Adjustment Events*).

Error is defined in Section 6.1.1 (*Errors*).

Excess Return Index is defined in Section 2.2.1 (*Excess Return Calculation*).

Excess Return Index Level is defined in Section 2.2.1 (*Excess Return Calculation*).

General Adjustment Event is defined in Section 5.1 (*Adjustment Events*).

Holding Rolling In is defined in Section 2.2.1 (*Excess Return Calculation*).

Holding Rolling Out is defined in Section 2.2.1 (*Excess Return Calculation*).

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

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

Index Business Days, in respect of an Index, are the days in the Index Calendar.

Index Business Day, $t - 1$, in respect of an Index Business Day t , is the Index Business Day immediately preceding such Index Business Day t .

Index Calculation Agent is defined in Section 7.2.2 (*Index Calculation Agent*).

Index Calendar, in respect of an Index, is the calendar of days in respect of which an Index Level will be published, as specified in the relevant Index Specifications.

Index Currency, in respect of an Index, is US Dollar (USD).

Index Daily Return is defined in Section 2.2.1 (*Excess Return Calculation*).

Index Level, in respect of an Index and an Index Business Day, is defined in Section 2.2 (*Index Level Calculation*) and is the level of such Index as calculated and published by the Index Calculation Agent.

Index Live Date, in respect of an Index, is specified in the Index Specifications and is the date on which the Methodology of the Index was finalised.

Index Manual is defined in the section entitled “Important Information”.

Index Name, in respect of an Index, is the name that identifies such Index, as specified in the relevant Index Specifications.

Index Oversight Committee is defined in Section 7.1 (*Oversight, Roles, Conflicts and Reviews*).

Index Publication Days are defined in Section 8.2 (*Publication of Index Level*).

Index Specifications is a set of variables particular to an Index, as set out in the table in Annex A (*Index Specifications*) hereto.

Index Start Date, in respect of an Index, is specified in the relevant Index Specifications. The Index Calculation Agent may calculate, but not publish, the Index Level in respect of Index Business Days preceding the Index Start Date if that is required for calculating the Index Level of the Index on the Start Date or on following days.

Index Start Level, in respect of an Index, is the Index Level of such Index on the Index Start Date and is specified in the Index Specifications.

Index Type, in respect of an Index, defines the type of calculation for the Index Level: ER for Excess Return, TR for Total Return or SR for Spot Return. The Index Type is defined in the relevant Index Specifications.

Initial Calculation Date, in respect of an Index, means the date on which the Index Calculation Agent first implemented the Index and published the Index Level. The Initial Calculation Date may fall on or after the Index Live Date.

Input Error is defined in Section 6.1.1 (*Errors*).

Market Disruption Event is defined in Section 3.1 (*Market Disruption Events*).

Market Disruption Longstop Date is defined in Section 3.2 (*Roll Weight Calculation During Market Disruption Events*).

Material Error is defined in Section 6.1.1 (*Errors*).

Methodology is as defined in the section entitled “Important Information”.

Publication Time is defined in Section 8.2 (*Publication of Index Level*).

Regulatory Event is defined in Section 5.3 (*Regulatory Event*).

Replicability Event is defined in Section 5.1 (*Adjustment Events*).

Risk Factors is as defined in the section entitled “Important Information”.

Roll Fraction is defined in Section 2.1 (*Roll Weights Calculation*)..

Roll Length, in respect of an Index, is the number of the Index Business Days required to periodically move the exposure from the Contract Rolling Out into the Contract Rolling In. The Roll Length is specified in the relevant Index Specifications.

Roll Period is defined in Section 2.1 (*Roll Weights Calculation*).

Roll Start Date, in respect of an Index and a calendar month, is the Index Business Day on which the Index exposure periodically starts to move from the Contract Rolling Out into the Contract Rolling In. The Roll Start Date is specified in the relevant Index Specifications and is represented by a number denoting the Index Business Day that is the Roll Start Date in respect of such month. If the Roll Start Date is represented by a negative number, then the Roll Start Date is the Index Business Day that falls the specified number of Index Business Days prior to the first Index Business Day of such month. For example, if the Roll Start Date specified in respect of an Index is 5, then the Roll Start Date for that Index will be the 5th Index

Business Day of each month; or if the Roll Start Date is -1, then the Roll Start Date for that Index will be the last Index Business Day of the preceding month, etc.

Roll Type, in respect of an Index, is a parameter that defines the handling of Market Disruption Events during the Roll Window, as described in Section 3.2 (*Roll Weight Calculation during Market Disruption Events*). The Roll Type with respect to an Index is defined in Annex A (*Index Specifications*).

Roll Weight is defined in Section 2.1 (*Roll Weights Calculation*).

Spot Index Daily Return is defined in Section 2.2.3 (*Spot Return Calculation*).

Spot Return Index is defined in Section 2.2.3 (*Spot Return Calculation*).

Spot Return Index Level is defined in Section 2.2.3 (*Spot Return Calculation*).

Static Contract Roll Schedule, in respect of an Index, denotes the expiring Contract of such Index that will be removed from the Index over the Roll Period of each month, starting with January and ending with December, as specified in the relevant Index Specifications. The Contract that is removed each month will be replaced with the Contract that is scheduled to be removed the following month. If a “+” sign is included next to a letter, the futures contract indicated is the one associated with the corresponding month of the year following the month in respect of which this Contract is selected. The letters translate to months according to the following table:

Month	Letter
January	F
February	G
March	H
April	J
May	K
June	M
July	N
August	Q
September	U
October	V
November	X
December	Z

On certain occasions the expiry of a contract may fall outside the month with which it is associated. In all situations the schedule will denote the month with which a futures contract is associated in its corresponding Trading Facility.

Total Return Index is defined in Section 2.2.2 (*Total Return Calculation*).

Total Return Index Level is defined in Section 2.2.2 (*Total Return Calculation*).

Trading Facility, in respect of an Index, is the regulated futures exchange, facility or platform on or through which the Contracts underlying such Index are traded, as specified in the relevant Index Specifications.

Treasury Bill Rate is the 91-day discount rate for U.S. Treasury Bills, as reported by the U.S. Department of the Treasury's Treasury Direct service.

Underlying Contracts is defined in Section 3 (*Market Disruption Events*).

SECTION 5: ADJUSTMENT EVENTS AND REGULATORY EVENT

5.1 ADJUSTMENT EVENTS

If an Adjustment Event occurs, the Index Calculation Agent may, but shall not be obliged to, take one or more of the following steps:

- (i) suspend the publication of the Index Level until such time as the Adjustment Event ceases to occur; or
- (ii) with the approval of the Index Oversight Committee:
 - (a) substitute the Component, if applicable, affected by the Adjustment Event with an asset which has similar characteristics and make such adjustments to the Index as are necessary, if any, in order to account for the substitution;
 - (b) make such adjustments to the Index (including to any of the weights or values of the Components or to the Index Level) and/or alter the methodology of the Index, in order to account for the effect of the Adjustment Event; or
 - (c) if no such adjustment or alteration could be made to preserve the objective of the Index, discontinue the Index.

Adjustment Event means, in respect of a Component, each General Adjustment Event and each Asset Class Specific Adjustment Event (as defined in Section 5.2 (*Asset Class Specific Definitions – Adjustment Events*)) as applicable for such Component.

Change in Economic Assumptions means, in respect of a Component, a material change of any economic assumptions (including, but not limited to, assumptions as to liquidity, estimated trading and/or rolling costs of the Components, bid/offer spreads in the market in respect of the Components and the funding cost associated with trading the Components) incorporated into the Methodology for such Component.

Component Change Event means, in respect of a Component, that since the Index Live Date, liquidity for the Component on the relevant trading venue has materially decreased in the context of the known or expected financial exposure to the Index.

Component Licensing Event means, in respect of a Component or any instrument or security on which the value of a Component depends, and for which a license has been granted to the Index Administrator (or an affiliate of the Index Administrator) in relation to the calculation, hedging or use of the Index, that either (a) such license is revoked, impaired or otherwise disputed for any reason, or (b) there is a material increase in the fee schedule applicable to such license.

Dealer means a hypothetical broker dealer subject to the same securities laws and rules and regulations of any securities regulators, exchanges and self-regulating organisations as apply to the Index Administrator.

General Adjustment Event means any of the following: a Change in Economic Assumptions, a Component Change Event, a Component Licensing Event and a Replicability Event.

Replicability Event means that, on or after the Index Live Date, the Index Oversight Committee determines that one or more Dealers would be unable, after using commercially reasonable efforts, to hold, acquire, maintain, short sell or dispose of:

- (i) one or more Components;
- (ii) any instrument or security on which the value of a Component depends; or
- (iii) any instrument or security which is required to replicate the calculation methodology of the Index (including, but not limited to, interest rates and FX rates, if applicable).

5.2 ASSET CLASS SPECIFIC DEFINITIONS – ADJUSTMENT EVENTS

5.2.1 Exchange Traded Components

The following terms are applicable in respect of each Component.

Asset Class Specific Adjustment Event means Contract Change Event.

Contract Change Event means, in respect of a Component, any of the following:

- (i) the specifications of an Underlying Contract are materially altered by the relevant Trading Facility; or
- (ii) an Underlying Contract is permanently no longer traded on the relevant Trading Facility.

5.3 REGULATORY EVENT

If a Regulatory Event occurs, the Index Administrator may, but shall not be obliged:

- (i) to suspend the publication of the Index Level until such time as the Regulatory Event ceases to occur; or
- (ii) with the approval of the Index Oversight Committee, to discontinue the Index.

Regulatory Event means that on or after the Index Live Date (a) due to the adoption of or any change in any applicable regulation, or (b) due to the promulgation of or any change in the interpretation by any court, tribunal or regulatory authority with competent jurisdiction of any applicable regulation, the Index Administrator determines that it is not permitted (or there is a reasonable likelihood that, within the next 30 Index Publication Days, it will not be permitted) to continue to sponsor, administer, maintain or calculate, as applicable, the Index.

SECTION 6: CORRECTIONS, CHANGES, CESSATION AND DISCRETION

6.1 CORRECTIONS AND ERROR HANDLING

6.1.1 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**).

Where:

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.

6.1.2 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 6.2 (*Changes in Methodology*)).

6.1.3 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.

6.2 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.

6.3 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 an 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.

6.4 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 the following sections:

- Section 3 (*Market Disruption Events*);
- Section 5 (*Adjustment Events and Regulatory Event*); and
- Section 6 (*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 7: OVERSIGHT, ROLES, CONFLICTS AND REVIEWS

7.1 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 Group;
- 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.

7.2 INDEX ADMINISTRATOR AND INDEX CALCULATION AGENT

7.2.1 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.

7.2.2 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 Group of Macquarie Bank Limited acts as index calculation agent (the **Index Calculation Agent**) in respect of the Index as of the date of this Index 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.

7.2.3 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.

7.2.4 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.

7.3 CONFLICTS

The Index is based on underlying assets, as described in the Methodology. 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 an Index. The Index Administrator and/or its affiliates may underwrite or issue other securities or financial instruments indexed to an Index, and the Index Administrator or its affiliates may license an Index for publication or for use by unaffiliated third parties. These activities could present conflicts of interest and could affect the value of an 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 an 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.

7.4 REVIEWS

The Index Administrator has procedures in place to review a sample of its indices (which may not include these Indices) on an annual basis (or more frequently, if it determines appropriate). Such sample shall include the indices requested by the Index Oversight Committee to be reviewed. 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 6.2 (*Changes in Methodology*).

SECTION 8: GENERAL INFORMATION

8.1 VALUATION AND CALCULATIONS

The Index Calculation Agent shall, unless stated otherwise, perform all calculations in this Index Manual from the Initial Calculation Date. 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.

8.2 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 be final and binding (save for changes made pursuant to Section 6 (*Corrections, Changes, Cessation and Discretion*)). See Section 6.1.2 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 Index Publication Day.

Index Publication Days, in respect of an Index, are the days that are in the Index Calendar.

8.3 HISTORICAL VALUES OF THE INDEX

Hypothetical back-tested historical levels of the Index prior to the Index Live Date 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 9: NOTICES AND DISCLAIMERS

9.1 REGULATORY STATUS

This material is prepared and distributed in the UK by Macquarie Bank Limited, London Branch (MBLLB) and in the EEA member states (other than the UK) by Macquarie Bank International Limited (MBIL) and Macquarie Bank Europe (DAC) (MBE) where required. It is intended only for professional clients and eligible counterparties as defined in the rules of the Financial Conduct Authority. MBLLB is registered in England and Wales (Branch No: BR002678, Company No: FC018220, Firm Reference No: 170934). MBIL is incorporated and registered in England and Wales (Company No. 06309906, Firm Reference No. 471080). MBE is registered and incorporated in the Republic of Ireland (Company No. 634817). The registered office for MBLLB and MBIL is Ropemaker Place, 28 Ropemaker Street, London, EC2Y 9HD. The registered office of MBE is First Floor, Connaught House, 1 Burlington Road, Dublin 4, D04 C5Y6, Ireland. MBLLB is authorised and regulated by the Australian Prudential Regulation Authority. MBIL is authorised by the Prudential Regulation Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. MBE is authorised and regulated by the Central Bank of Ireland. Details about the extent of our regulation are available from us on request.

9.2 NOT RESEARCH OR AN OFFER

This document is not a personal recommendation as defined by the Financial Conduct Authority and you should consider whether you can rely upon any opinion or statement contained in this document without seeking further advice tailored for your own circumstances. It is also not investment research, and has not been prepared in accordance with legal requirements designed to promote the independence of such. Any opinions expressed herein may differ from the opinions expressed in other departments including the research department. Nor have the contents of this document been reviewed by any regulatory authority, and the distribution of this document and availability of related financial instruments in certain jurisdictions may be restricted by law.

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 an Index. Any offering or potential transaction that may be related to an 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.

9.3 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.

ANNEX A – INDEX SPECIFICATIONS

Annex A may be supplemented from time to time by the addition of new Index Specifications in respect of additional Indices.

Bloomberg Ticker	Index Name	Commodity	Trading Facility	Static Contract Roll Schedule	Roll Start Date	Roll Length	Index Start Level	Index Start Date	Index Live Date	Index Calendar	Roll Type	Index Type
MQSDIO1E	Macquarie Single SGX Iron Ore 62% (SCO) Quarterly Roll 1 ER Index	SGX Iron Ore 62% (SCO)	SGX	HHMMMUIUZZZH+	5	15	100	15-Apr-13	31-Jan-20	New York Mercantile Exchange	Extend	ER
MQSDIO2E	Macquarie Single SGX Iron Ore 62% (SCO) Quarterly Roll 2 ER Index	SGX Iron Ore 62% (SCO)	SGX	GKKKQQQXXXG+G+	5	15	100	15-Apr-13	31-Jan-20	New York Mercantile Exchange	Extend	ER
MQSDIO3E	Macquarie Single SGX Iron Ore 62% (SCO) Quarterly Roll 3 ER Index	SGX Iron Ore 62% (SCO)	SGX	JJJNNNVVVF+F+F+	5	15	100	15-Apr-13	31-Jan-20	New York Mercantile Exchange	Extend	ER
MQSCIOER	Macquarie Single SGX Iron Ore 62% (SCO) Monthly Roll ER Index	SGX Iron Ore 62% (SCO)	SGX	GHJKMNQUVXZF+	5	15	100	15-Apr-13	29-Jun-20	New York Mercantile Exchange	Extend	ER
MQSCIOSR	Macquarie Single SGX Iron Ore 62% (SCO) Monthly Roll SR Index	SGX Iron Ore 62% (SCO)	SGX	GHJKMNQUVXZF+	5	15	100	15-Apr-13	29-Jun-20	New York Mercantile Exchange	Extend	SR
MQSCLPLE	Macquarie NYM Platinum (PL) Type B 15d Roll ER Index	NYM Platinum (PL)	NYM	JJJNNNVVVF+F+F+	-6	15	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLPAE	Macquarie NYM Palladium (PA) Type B 15d Roll ER Index	NYM Palladium (PA)	NYM	HHMMMUIUZZZH+	-6	15	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLQWE	Macquarie ICE White Sugar (QW) Type B 15d Roll ER Index	ICE White Sugar (QW)	ICE	HKKQQQVVZZH+H+	-6	15	100	07-Jan-03	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLDFE	Macquarie ICE Robusta Coffee (DF) Type B 15d Roll ER Index	ICE Robusta Coffee (DF)	ICE	HHKKNNUXXF+F+	-6	15	100	15-Dec-09	13-Apr-21	New York Mercantile Exchange	Extend	ER

MQSCLLE	Macquarie LME Lead (LL) Type B 15d Roll ER Index	LME Lead (LL)	LME	GHJKMNQVXZF+	-6	15	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLLTE	Macquarie LME Tin (LT) Type B 15d Roll ER Index	LME Tin (LT)	LME	GHJKMNQVXZF+	-6	15	100	06-Jan-06	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLMWE	Macquarie MGE Wheat (Minneapolis) (MW) Type B 15d Roll ER Index	MGE Wheat (Minneapolis) (MW)	MGE	HHKKNNUZZZH+	-6	15	100	07-Jan-05	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLJOE	Macquarie NYB Orange Juice (JO) Type B 15d Roll ER Index	NYB Orange Juice (JO)	NYB	HHKKNNUXXF+F+	-6	15	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLOE	Macquarie CBT Oats (O) Type B 15d Roll ER Index	CBT Oats (O)	CBT	HHKKNNUZZZH+	-6	15	100	10-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLRRE	Macquarie CBT Rough Rice (RR) Type B 15d Roll ER Index	CBT Rough Rice (RR)	CBT	HHKKNNUXXF+F+	-6	15	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLLBE	Macquarie CME Random Length Lumber (LB) Type B 10d Roll ER Index	CME Random Length Lumber (LB)	CME	HHKKNNUXXF+F+	-6	10	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Recoup	ER
MQSCLDAE	Macquarie CME Class III Milk (DA) Type B 15d Roll ER Index	CME Class III Milk (DA)	CME	FGHJKMNQVXZ	-6	15	100	08-Jan-14	13-Apr-21	New York Mercantile Exchange	Extend	ER
MQSCLPLS	Macquarie NYM Platinum (PL) Type B 15d Roll SR Index	NYM Platinum (PL)	NYM	JJJNNNVVVF+F+F+	-6	15	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSCLPAS	Macquarie NYM Palladium (PA) Type B 15d Roll SR Index	NYM Palladium (PA)	NYM	HHMMMUUZZZH+	-6	15	100	07-Jan-03	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSCLQWS	Macquarie ICE White Sugar (QW) Type B 15d Roll SR Index	ICE White Sugar (QW)	ICE	HKKQQQVVZZH+H+	-6	15	100	07-Jan-03	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSCLDFS	Macquarie ICE Robusta Coffee (DF) Type B 15d Roll SR Index	ICE Robusta Coffee (DF)	ICE	HHKKNNUXXF+F+	-6	15	100	15-Dec-09	13-Apr-21	New York Mercantile Exchange	Extend	SR

MQSCLLS	Macquarie LME Lead (LL) Type B 15d Roll SR Index	LME Lead (LL)	LME	GHJKMNQUVXZF+	-6	15	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSCLLTS	Macquarie LME Tin (LT) Type B 15d Roll SR Index	LME Tin (LT)	LME	GHJKMNQUVXZF+	-6	15	100	06-Jan-06	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSCLMWS	Macquarie MGE Wheat (Minneapolis) (MW) Type B 15d Roll SR Index	MGE Wheat (Minneapolis) (MW)	MGE	HHKKNNUUZZZH+	-6	15	100	07-Jan-05	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSCLJOS	Macquarie NYB Orange Juice (JO) Type B 15d Roll SR Index	NYB Orange Juice (JO)	NYB	HHKKNNUXXF+F+	-6	15	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSCLOS	Macquarie CBT Oats (O) Type B 15d Roll SR Index	CBT Oats (O)	CBT	HHKKNNUUZZZH+	-6	15	100	10-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSCLRRS	Macquarie CBT Rough Rice (RR) Type B 15d Roll SR Index	CBT Rough Rice (RR)	CBT	HHKKNNUXXF+F+	-6	15	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSCLLBS	Macquarie CME Random Length Lumber (LB) Type B 10d Roll SR Index	CME Random Length Lumber (LB)	CME	HHKKNNUXXF+F+	-6	10	100	07-Jan-00	13-Apr-21	New York Mercantile Exchange	Recoup	SR
MQSCLDAS	Macquarie CME Class III Milk (DA) Type B 15d Roll SR Index	CME Class III Milk (DA)	CME	FGHJKMNQUVXZ	-6	15	100	08-Jan-14	13-Apr-21	New York Mercantile Exchange	Extend	SR
MQSDCCAE	Macquarie California Carbon Allowance (CCA) 15d Roll ER Index	California Carbon Allowance (CCA)	ICE	ZZZZZZZZZZZ+ ¹	-6	15	100	02-Feb-15	17-Nov-21	New York Mercantile Exchange	Extend	ER
MQSDRGIE	Macquarie Regional Greenhouse Gas Initiative (RGGI) 15d Roll ER Index	Regional Greenhouse Gas Initiative (RGGI)	ICE	ZZZZZZZZZZZ+ ¹	-6	15	100		17-Nov-21	New York Mercantile Exchange	Extend	ER

¹ The Contract corresponding to this Commodity has an associated “vintage” corresponding to a calendar year. Accordingly, “Z” refers to the Contract with a vintage of the same calendar year as the year in respect of which this Contract is selected and Z+ refers to the Contract with a vintage corresponding to the following calendar year.