

# Macquarie MQCP646 Capped Index

**Index Manual  
June 2019**

## NOTES AND DISCLAIMERS

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### BASIS OF PROVISION

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This Index Manual sets out the rules for the Macquarie MQCP646 Capped Index (the *Index*) and reflects the methodology for determining the composition and calculation of the Index (the *Methodology*).

**The Index Manual assumes the reader is a sophisticated financial market participant, with the knowledge and expertise to understand the investment strategy described herein and the associated risks. It is unsuitable for a retail or unsophisticated audience.**

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### DATE OF INDEX MANUAL AND CHANGES TO THE INDICES

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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 Sponsor may, however, supplement, amend or withdraw the Methodology at any time if it determines that the Index is no longer calculable under the existing Methodology. The Index Sponsor may also determine that a change to the Methodology is required or desirable to address an error, ambiguity or omission. Such changes may include changes to eligibility requirements or construction as well as changes to the daily Index calculations. If a supplement or amendment is required and such supplement or amendment materially affects the Index Levels of the Index, the Index Sponsor will publish such changes to the Methodology, together with the rationale for such changes, 30 days prior to implementation. However if prior publication of the changes is not practicable, the changes and rationale will be published as soon as is reasonably practicable.

The Index Sponsor may withdraw the Index, at any time and without notice, if no financial instruments (in respect of which it has given consent to refer to the Index) are outstanding. The Index Sponsor may, in any case, withdraw the Index, without reason, provided it publishes its intention to do so at least six months prior to cessation of calculation and publication of Index levels.

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

### NOT RESEARCH OR AN OFFER

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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 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.

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.

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#### HISTORICAL VALUES OF THE INDICES

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Hypothetical back-tested historical values of the Index are not indicative of future performance. The Index Sponsor 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.

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#### DISCLAIMER OF LIABILITY

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The Methodology is published for information purposes only and does not create any legally binding obligation on the part of the Index Sponsor, Index Calculation Agent and/or their affiliates. This document is intended to provide a summary of the Index it purports to describe. The Index Sponsor expressly disclaims (to the fullest extent permitted by applicable law) all warranties (express, statutory or implied) regarding this document and the Methodology or the Indices, 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 Sponsor and Index Calculation Agent do not warrant or guarantee the accuracy or timeliness of calculations of the Index value and do not warrant or guarantee the availability of the Index value on any particular date or at any particular time. The Index Sponsor and 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 an underlying Contract or as a result of a Contract failing to trade for any reason. Although the Index Calculation Agent will obtain information concerning Contracts from publicly available sources it believes reliable, it will not independently verify this information. Accordingly, no representation, warranty or undertaking (express or implied) is made by the Index Sponsor or Index Calculation Agent as to the accuracy and completeness of information concerning the Index.

In particular, the Index Sponsor and Index Calculation Agent are under no obligation to monitor whether or not a Market Disruption Event has occurred and shall not be liable for any losses resulting from (i) any determination that a Market Disruption Event has occurred or has not occurred in relation to a Contract, (ii) the timing relating to the determination that a Market Disruption Event has occurred in relation to a Contract, or (iii) any actions taken or not taken by the Index Calculation Agent as a result of such determination that an Market Disruption Event has occurred.

## NOTICES

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The Index is based on Contracts, as described in the Methodology. The Index Sponsor and/or its affiliates actively trade Contracts and options on Contracts. The Index Sponsor 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 Contracts or are linked to the performance of the Index. The Index Sponsor and/or its affiliates may underwrite or issue other securities or financial instruments Indexed to an Index, and the Index Sponsor 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 the Index. The Index Sponsor trades or may trade as principal in instruments (or related derivatives) linked to the Index described in this document, and may have proprietary positions in the instruments (or related derivatives). The Index Sponsor may make a market in such instruments (or related derivatives), which may in extreme circumstances affect the levels of the Index described.

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## CONTENTS

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NOTES AND DISCLAIMERS.....	2
BASIS OF PROVISION.....	2
DATE OF INDEX MANUAL AND CHANGES TO THE INDICES .....	2
NOT RESEARCH OR AN OFFER.....	2
HISTORICAL VALUES OF THE INDICES .....	3
DISCLAIMER OF LIABILITY.....	3
NOTICES .....	4
INTRODUCTION.....	6
THE UNIVERSE OF SELECTABLE COMMODITIES.....	6
THE SELECTION PROCESS.....	8
THE DIVERSIFICATION REQUIREMENTS.....	8
GENERAL NOTES ON THE INDICES AND THE METHODOLOGY.....	8
INDEX GOVERNANCE .....	10
INDEX SPONSOR AND INDEX CALCULATION AGENT.....	11
THE INDEX SPONSOR .....	11
THE INDEX CALCULATION AGENT .....	11
RELATIONSHIP OF THE INDEX SPONSOR AND THE INDEX CALCULATION AGENT .....	11
DEFINITIONS.....	12
INDEX CALCULATION.....	19
SECTION 1: HOLDINGS CALCULATION .....	19
TARGET HOLDINGS CALCULATION ON A HOLDINGS CALCULATION DATE.....	19
DAILY HOLDINGS CALCULATION .....	19
SECTION 2: DAILY INDEX CALCULATION .....	21
SECTION 3: MARKET DISRUPTION EVENTS.....	23
INDEX CALCULATION UNDER MARKET DISRUPTION EVENTS.....	23
SECTION 4: ALLOCATION OF WEIGHTS .....	26
SECTION 4.1: YIELD CALCULATION.....	26
SECTION 4.2: DETERMINATION OF SELECTED COMMODITIES .....	28
SECTION 4.3: DETERMINATION OF COMMODITY WEIGHTS.....	28
SECTION 4.4: DETERMINATION OF COMPONENT WEIGHTS .....	30
CONTACTS.....	32

## INTRODUCTION

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The Macquarie MQCP646 Capped Index (hereafter, the *Index*) is designed as a rules based benchmark for exposure to the “commodity carry” investment strategy. This strategy aims to take advantage of storage-related risk premium, the existence of which can be explained by the fact that short-term storage is typically more expensive than long-term storage for all Commodities except Zinc. The premium can be captured by taking long exposure to long-dated (*deferred*) commodity futures contracts and simultaneous short exposure to short-dated (*front month*) commodity futures contracts. For Zinc, however, this premium is considered to be minimal, and this strategy takes long exposure to short-dated (*front month*) commodity futures contracts and simultaneous short exposure to long-dated (*deferred*) commodities futures contracts, to address the requirements of investors who wish to long Zinc futures contracts spreads. If the shape of the futures curve remains unchanged, the strategy will generate a positive return.

The strategy is implemented by establishing a rule-set that, on a monthly basis, selects Commodities with positive yield attributes for inclusion in the Index. This list is then supplemented with further Commodities, to the extent required, in order to meet certain diversification requirements. Pre-determined provisional weights (the *Initial Weights*) are assigned to each selected Commodity and then rebalanced to ensure no Commodity or Group of Commodities has a disproportionate effect on the Index.

If Zinc is selected as a Commodity that displayed positive yield attributes, the Index obtains a long (positive) exposure to a front month futures contract and a short (negative) exposure to a deferred futures contract. For all other selected Commodities, the Index obtains a long (positive) exposure to a deferred futures contract in respect of that commodity and a short (negative) exposure to a front month futures contract.

## THE UNIVERSE OF SELECTABLE COMMODITIES

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The universe of Commodities available for selection in the Index have been determined by reference to global commodity production and liquidity of available commodity futures contracts. Commodities relating to the agricultural and livestock sectors have been excluded, to address the requirements of investors who do not wish to participate in food-related futures contracts. Futures contracts relating to precious metals and Brent crude oil are also excluded, on the basis such futures contracts have not, historically, performed well in commodity carry investment strategies.

Index exposure to deferred or front month commodity futures contracts is obtained via allocation to Macquarie Single Commodity Curve Spread Component Indices. Each such index tracks a sequence of futures contracts relating to a single commodity and a particular point on the futures curve (either deferred or front month).

Information on the Macquarie Single Commodity Curve Spread Component Indices can be found in the Index Manual, dated June 2017, available at:

<http://static.macquarie.com/dfiles/Internet/mgl/global/shared/corporate/trading-and-hedging/commodities/macquarie-single-commodity-curve-spread-indices.pdf>

The universe of eight commodities and the Initial Weights applicable to each has been determined by the Index Sponsor as a result of a one-off process prior to the creation of the Index and will not change for the life of the Index.

## THE SELECTION PROCESS

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The Index rules identify Commodities for inclusion by examining a futures contract on each Commodity and calculating the difference (the *Yield Difference*) between the ‘implied roll yield’ of a deferred Contract and a (volatility-adjusted) implied roll yield of a front month Contract.

For each Commodity, the ‘implied roll yield’ is a measure of the difference in curvature of a commodity futures ‘curve’ at the front (where a Nearby Component Type has exposure) versus the back (where the Deferred Component Type has exposure). A positive roll yield indicates an expected positive return (derived by a long Nearby Component exposure and an equivalent short Deferred Component exposure in respect of Zinc and a short Nearby Component exposure and an equivalent long Deferred Component exposure in respect of all other selected Commodities) if the futures ‘curve’ retains its shape. A negative implied yield indicates an expected negative return if the futures ‘curve’ retains its shape.

Commodities that exhibit a positive Yield Difference are automatically included in a provisional list.

## THE DIVERSIFICATION REQUIREMENTS

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Once the provisional list of Commodities has been determined, the Index rules then supplement that list in order to ensure the Index includes at least five Commodity Groups.

The Commodities in the final list are referred to as the ‘Selected Commodities’ to which the Index will allocate exposure. Exposure is allocated by assignment of an Initial Weight to each Selected Commodity, then re-balanced to ensure that the largest Group is weighted at no more than 32% of the Index and no other Group is weighted at more than 18%.

Note that, if there are less than 5 Commodity Groups represented in the set of commodities that exhibit a positive Yield Difference, Commodities with zero or negative Yield Differences will be included in the Index.

The process of selection and the application of the diversification requirements are described in Section 4 (*Allocation of Weights to Commodities*).

## GENERAL NOTES ON THE INDICES AND THE METHODOLOGY

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The Index is designed to be replicable and readily accessible to market participants. It is calculated daily in an excess return format. To facilitate an understanding of the calculations, the Methodology contains various worked examples which demonstrate the types of calculations needed to calculate the level of an Index on a particular date.

The Index is calculated and maintained by the Index Calculation Agent and supervised by the Index Sponsor and Supervisory Committee, as described below. The Index is not based upon submissions provided by third parties (or an affiliate of the Index Sponsor or Calculation Agent) or expert judgment. The Index is based upon actual transaction data sourced from regulated markets and exchanges.



The Index Sponsor will publish the Index Manual as well as any announcements regarding calculations relevant to the Index, such as Weight calculations, in a timely manner on its website, <http://www.macquarie.com/commodityindexdocumentation>.

## INDEX GOVERNANCE

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

- A Managing Director in the Commodity Markets and Finance division of the Commodities and Global Markets Group;
- A Director from the Legal and Governance Group;
- A representative from the Technology division of the Corporate Operations Group;
- A representative from the Business Operational Risk Management department of the Central division of the Commodities and Global Markets Group;
- A representative from the Risk division of the Risk Management Group; and
- A representative from the Compliance division of the Risk Management Group.

Each member of the Oversight Committee is sufficiently knowledgeable about commodity futures contracts and the commodities markets in general, and is required to act in good faith and in a commercially reasonable manner.

The Index Sponsor will make available upon request the names of the individuals forming the Oversight Committee.

The 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 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 approval of any changes to the Methodology, any contemplated cancellation of the Index and the resolution of any issues which arise in relation to the Index.

## INDEX SPONSOR AND INDEX CALCULATION AGENT

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### THE INDEX SPONSOR

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Macquarie Bank Limited is the Index Sponsor. Notwithstanding anything to the contrary, the Index Sponsor 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. The Index Calculation Agent is appointed by the Index Sponsor to calculate and maintain each Index from and until such time that the Index Sponsor 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 Oversight Committee.

The Index Sponsor may, from time to time, revise, amend and/or supplement this Manual. If such revisions or supplement materially affect the calculation of the Index, the Index Sponsor shall publish a new Manual no later than 30 days prior to implementation of the revised or supplemented rules. If it is not reasonably practicable to publish revised Manual 30 days prior to such changes, the revised Manual will be published as soon as reasonably practicable.

### THE INDEX CALCULATION AGENT

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The Technology division of the Corporate Operations Group (*COG*) of Macquarie Bank Limited acts as “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.

### RELATIONSHIP OF THE INDEX SPONSOR AND THE INDEX CALCULATION AGENT

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The Index Calculation Agent is appointed by the Index Sponsor, subject to the approval of the Index Oversight Committee. While, as of the date of publication of these rules, both the Index Sponsor and the Index Calculation Agent form part of Macquarie Bank Limited, they are independent divisions within the bank and 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 Sponsor.

## DEFINITIONS

**Components**, are the Single Commodity Curve Spread Component Indices specified in the table below:

Component	Commodity	Type	Bloomberg Ticker
Macquarie Single Commodity Nearby Curve Spread Component High Grade Copper ER Index	Copper	Nearby	MQCP255E
Macquarie Single Commodity Deferred Curve Spread Component High Grade Copper ER Index	Copper	Deferred	MQCP237E
Macquarie Single Commodity Nearby Curve Spread Component Nickel ER Index	Nickel	Nearby	MQCP257E
Macquarie Single Commodity Deferred Curve Spread Component Nickel ER Index	Nickel	Deferred	MQCP238E
Macquarie Single Commodity Nearby Curve Spread Component Heating Oil ER Index	Heating Oil	Nearby	MQCP239E
Macquarie Single Commodity Deferred Curve Spread Component Heating Oil ER Index	Heating Oil	Deferred	MQCP240E
Macquarie Single Commodity Nearby Curve Spread Component Unleaded Gasoline ER Index	Gasoline	Nearby	MQCP241E
Macquarie Single Commodity Deferred Curve Spread Component Unleaded Gasoline ER Index	Gasoline	Deferred	MQCP242E
Macquarie Single Commodity Nearby Curve Spread Component WTI Crude Oil ER Index	WTI Crude	Nearby	MQCP254E
Macquarie Single Commodity Deferred Curve Spread Component WTI Crude Oil ER Index	WTI Crude	Deferred	MQCP243E
Macquarie Single Commodity Nearby Curve Spread Component Zinc ER Index	Zinc	Nearby	MQCP258E
Macquarie Single Commodity Deferred Curve Spread Component Zinc ER Index	Zinc	Deferred	MQCP244E
Macquarie Single Commodity Nearby Curve Spread Component Aluminium ER Index	Aluminium	Nearby	MQCP256E

Macquarie Single Commodity Deferred Curve Spread Component Aluminium ER Index	Aluminium	Deferred	MQCP245E
Macquarie Single Commodity Nearby Curve Spread Component Nat Gas ER Index	Natural Gas	Nearby	MQCP246E
Macquarie Single Commodity Deferred Curve Spread Component Nat Gas ER Index	Natural Gas	Deferred	MQCP247E

If Zinc is a Selected Commodity, the Index will take a long exposure in its Nearby Type of Component and a short exposure in its corresponding Deferred Type of Component. For all other Selected Commodities, the Index will take a long exposure in its Deferred Type of Component and a short exposure in its corresponding Nearby Type of Component. Both the Deferred Type and the Nearby Type Components roll their exposure over three Index Business Days starting on the fifth Index Business Day of the month.

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

**Commodity**, is each commodity corresponding to each Component. The total number of commodities is denoted by  $n$ .

**Commodity Weights**, are the weights periodically established by the Weighting Methodology for each Commodity and which are used to calculate the set of (Component) Weights, as described in Section 4.4 (*Determination of Component Weights*).

**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 Component Level on the most recent publication day.

**Contract**, is a futures contract traded in a Trading Facility and having a Commodity as underlying.

**Deferred Comparison Contract**, in respect of each Commodity and a Holdings Calculation Date, is the Contract used for the purpose of the Deferred Yield calculation (Section 4.1 (*Yield Calculation*)) and as defined in below table.

For each Commodity one Index Business Day prior to a Holding Calculation Date  $R$ , the Deferred Comparison Contract is found in the below table on the row of the corresponding Commodity and the column of the month of the Holding Calculation Date  $R$ .

Commodity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Natural Gas	M	M	M	N	Q	U	V	G+	G+	G+	G+	G+

WTI Crude	J	K	M	N	Q	U	V	X	Z	F+	G+	H+
Gasoline	K	M	N	Q	Q	X	X	X	X	F+	G+	G+
Heating oil	K	K	M	U	V	V	V	Z	Z	H+	K+	K+
Aluminum	N	U	U	X	X	F+	F+	H+	H+	K+	K+	N+
Copper	N	U	U	U	Z	Z	Z	H+	H+	K+	K+	N+
Zinc	N	U	U	X	X	F+	F+	H+	H+	K+	K+	N+
Nickel	N	U	U	X	X	F+	F+	H+	H+	K+	K+	N+

**Deferred Contract**, in respect of each Commodity one Index Business Day prior to a Holdings Calculation Date, is the Contract used for the purpose of the Deferred Yield calculation (Section 4.1 (*Yield Calculation*)) and as defined in the table below.

For each Commodity on a Holding Calculation Date *R*, the Deferred Contract is found in the below table on the row of the corresponding Commodity and the column of the month of the Holding Calculation Date *R*. For example, the Deferred Contract for the Holding Calculation Date in June in respect of Natural Gas is the V (October) contract.

Commodity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Natural Gas	N	N	N	Q	U	V	X	H+	H+	H+	H+	H+
WTI Crude	K	M	N	Q	U	V	X	Z	F+	G+	H+	J+
Gasoline	M	N	Q	U	U	Z	Z	Z	Z	G+	H+	H+
Heating oil	M	M	N	V	X	X	X	F+	F+	J+	M+	M+
Aluminum	U	X	X	F+	F+	H+	H+	K+	K+	N+	N+	U+
Copper	U	Z	Z	Z	H+	H+	H+	K+	K+	N+	N+	U+
Zinc	U	X	X	F+	F+	H+	H+	K+	K+	N+	N+	U+
Nickel	U	X	X	F+	F+	H+	H+	K+	K+	N+	N+	U+

**Deferred Yield**, in respect of a Commodity and a Holdings Calculation Date, is the implied roll yield calculated by determining the annualized gradient between the Deferred Contract and the Deferred Comparison Contract in respect of that Commodity, as defined in Section 4.1 (*Yield Calculation*).

**Equivalent Holdings**, in respect of an Index Business Day, are numbers which, if applied as Holdings to the Underlying Contracts of the Index, would perfectly describe the performance of the Index in respect of that Index Business Day. Equivalent Holdings are determined in order to facilitate calculation of the Index where any Underlying Contract is subject to a Market Disruption Event. The calculation of

Equivalent Holdings is set out in Section 3 (*Market Disruption Events*) of the Index Calculation section below.

**Equivalent Target Holdings**, in respect of an Index Business Day, are numbers which, if applied as Holdings to the Underlying Contracts of the Index, would perfectly describe what the performance of the Index would have been if the Holdings of the Index were instead equal to the Target Holdings of the Index. Equivalent Target Holdings are determined in order to facilitate calculation of the Index where any Underlying Contract is subject to a Market Disruption Event. The calculation of Equivalent Target Holdings is set out in Section 3 (*Market Disruption Events*) of the Index Calculation section below.

**Expiration**, is the last tradeable date established by relevant Trading Facility for each Contract and is typically the date on which trading on that particular Contract ceases.

**Final Group Weights**, in respect of a Holdings Calculation Date, are the set of final capped Group Weights used in the calculation of Commodity Weights, as defined in Section 4.3 (*Determination of Commodity Weights*).

**Groups**, are Commodities bundled together based on their similarity and are used for weight capping purposes as set out in Section 4 (*Allocation of Weights*).

<b>Groups</b>	<b>Commodities</b>
Natural Gas	Natural Gas
Petroleum	WTI Crude, Heating Oil, RBOB Gasoline
Aluminium	Aluminium
Copper	Copper
Zinc	Zinc
Nickel	Nickel

**Holding**, in respect of a Component and an Index Business Day, is a number which is determined by the Index Calculation Agent as described in Section 1 (*Holdings Calculation*) of the Index Calculation section below. The Holding in respect of a 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 each Component back to the specified Weights. The Holdings Calculation Date is the fifth (5th) Index Business Day of a given calendar month.

**Index Business Days**, are the days in the Index Calendar.

**Index Calendar**, is the set of trading days of the NYSE Euronext Holiday schedule (<https://www.nyse.com/markets/hours-calendars>).

**Initial Index Level**, is 100.

**Initial Weight**, is the initial weight allocation of each Commodity, prior to application of the rebalancing rules:

Commodity	Initial Weight
Natural Gas	11.00%
WTI Crude	11.00%
Gasoline	11.00%
Heating oil	11.00%
Aluminum	15.00%
Copper	11.00%
Zinc	15.00%
Nickel	15.00%

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

**Index Start Date**, is 08 January 2007.

**Index Sponsor**, is Macquarie Bank Limited (*Macquarie*), the entity that calculates and publishes or announces (directly or through an agent) the daily level of the Index.

**Index Ticker**, is **MQCP646E** Index (Bloomberg).

**Interim Group Weight**, is the intermediate weight in respect of a Group during the iterative capping procedure.

**Final Group Weight**, is the weight in respect of a Group at the end of the iterative capping procedure.

**Nearby Comparison Contract**, in respect of each Commodity one Index Business Day prior to a Holdings Calculation Date, is the Contract used for the purpose of the Nearby Yield calculation (Section 4.1 (*Yield Calculation*)) and as defined in below table.

For each Commodity on a Holding Calculation Date *R*, the Nearby Comparison Contract is found in the below table on the row of the corresponding Commodity and the column of the month of the Holding Calculation Date *R*.

Commodity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Natural Gas	M	M	M	K	M	N	Q	G+	G+	F+	F+	F+
WTI Crude	G	H	J	K	M	N	Q	U	V	X	Z	F+
Gasoline	K	J	K	K	Q	X	X	X	V	Z	Z	F+



Heating oil	K	K	K	N	Q	Q	Q	X	X	H+	K+	K+
Aluminum	F	G	H	J	K	M	N	Q	U	V	X	Z
Copper	F	H	H	K	K	N	N	U	U	Z	Z	Z
Zinc	F	G	H	J	K	M	N	Q	U	V	X	Z
Nickel	F	G	H	J	K	M	N	Q	U	V	X	Z

**Nearby Contract**, in respect of each Commodity one Index Business Day prior to a Holdings Calculation Date, is the Contract used for the purpose of the Nearby Yield calculation (Section 4.1 (*Yield Calculation*)) and as defined in the table below.

For each Commodity on a Holding Calculation Date *R*, the Nearby Contract is found in the below table on the row of the corresponding Commodity and the column of the month of the Holding Calculation Date *R*. For example, the Nearby Contract for the Holding Calculation Date in July in respect of Natural Gas is the U (September) contract.

Commodity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Natural Gas	K	K	K	M	N	Q	U	F+	F+	G+	G+	G+
WTI Crude	H	J	K	M	N	Q	U	V	X	Z	F+	G+
Gasoline	J	K	M	M	N	V	V	V	X	F+	F+	G+
Heating oil	J	J	M	Q	U	U	U	Z	Z	G+	J+	J+
Aluminum	H	K	K	N	N	U	U	X	X	F+	F+	H+
Copper	H	K	K	N	N	U	U	Z	Z	H+	H+	H+
Zinc	H	K	K	N	N	U	U	X	X	F+	F+	H+
Nickel	H	K	K	N	N	U	U	X	X	F+	F+	H+

**Nearby Yield**, in respect of a Commodity and the prior Index Business Day to a Holdings Calculation Date, is the implied roll yield calculated by determining the annualized gradient between the Nearby Contract and the Nearby Comparison Contract in respect of that Commodity, as defined in Section 4.1 (*Yield Calculation*).

**Selected Commodities**, in respect of the Holdings Calculation Date, is the set of Commodities selected for investment, as described in Section 4 (*Allocation of Weights to Commodities*).

**Settlement Prices**, are the prices, 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.

**Target Holdings**, are a set of multipliers, derived from the Weights, which are utilized to rebalance the Components of the Index on each Holdings Calculation Date. Calculation of Target Holdings is described in Section 1 (*Holdings Calculation*) of the Index Calculation section below.

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

The **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 that Index or that of its Components.

**Weights**, are the weights periodically established by the Weighting Methodology and reflect the exposure of the Index to each Component.

**Weighting Methodology**, is the weight allocation procedure detailed in Section 4 (*Allocation of Weights to Commodities*) of the Index Calculation section.

**Yield Difference**, in respect of a Commodity and the Index Business Day prior to a Holdings Calculation Date, is the volatility-adjusted difference between the Deferred Yield and Nearby Yield in respect of that Commodity, as defined in Section 4.1 (*Yield Calculation*).

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## INDEX CALCULATION

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On a daily basis the Index replicates the returns obtained by holding a basket of Components (each a Single Commodity Index), the Weights of which are determined according to Section 4 (*Allocation of Weights to the Components*) of this Index Calculation section and rebalanced periodically according to Section 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.

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### SECTION 1: HOLDINGS CALCULATION

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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, we outline the Holdings,  $\{H_{1,t}, \dots, H_{n,t}\}$ , calculations on 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 Section 4 (*Allocation of Weights to the Components*) of this Index Calculation section.

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#### TARGET HOLDINGS CALCULATION ON A HOLDINGS CALCULATION DATE

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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 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 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  $R$ .

For example if, on the Index Business Day preceding a Holdings Calculation Date,  $R$ , the Index level is 100, the Component Level is 80 and the Weight of that Component is 40%, then the Target Holding of that Component in respect of that Holdings Calculation Date will be equal to  $100 \times (0.4) / 80 = 0.5$

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#### DAILY HOLDINGS CALCULATION

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On any Index Business Day,  $t$ , the set of Holdings  $\{H_{1,t}, \dots, H_{n,t}\}$  is calculated according to the following rule:

- (i) If  $t$  is the Index Business Day immediately following the Holdings Calculation Date  $R$ , the Holdings  $\{H_{1,t}, \dots, H_{n,t}\}$  are set equal to the Target Holdings  $\{TH_{1,R}, \dots, TH_{n,R}\}$  calculated on that Holdings Calculations Date.
- (ii) On any other Index Business Day,  $t$ , the Holding of each Component  $i$  on that day,  $H_{i,t}$ , is set to be equal to the Holding of that particular Component on the previous Index Business Day,  $H_{i,t-1}$ .

## SECTION 2: DAILY INDEX CALCULATION

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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 as well as the Initial Index Level, which is the value of the Index on the Index Start Date, are specified in the Definitions section above.

For example, if the Index were comprised of two components which had the following Component levels:

	Component 1	Component 2
Index Business Day $t-1$	32.48	31.49
Index Business Day $t$	32.83	31.21

and the following Holdings:

	Holding
Component 1	1.72
Component 2	1.48

then if the Index Level on Index Business Day t-1 was equal to 102.0564, the Index Level on Index Business Day t will be equal to:

$$I_t = 102.0564 + 1.72 \times (32.83 - 32.48) + 1.48 \times (31.21 - 31.49) = 102.244$$

The Index Level on Business Day t would be 102.244.

## SECTION 3: MARKET DISRUPTION EVENTS

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The Index is ultimately comprised of a set of futures on physical commodities (the *Underlying Contracts*). On any given Index Business Day, disruptions can occur that prevent these Underlying Contracts from being traded. When this happens, it is necessary for the calculations of the 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 futures 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.

On a Holdings Calculation Date, this is generally achieved by delaying any changes to the composition of each Component (or component of a Component) that is directly dependent on the disrupted Underlying Contracts. On any other Index Business Day, given that the replication of the Index does not require trading of Underlying Contracts on such days, in the event that a price is not available for a particular Underlying Contract, that price will be appropriately substituted by the Index Calculation Agent in order for the calculations in respect of a particular Index Business Day to take place.

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;
- (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;
- (iv) any other event, if the Index Sponsor reasonably determines that the event materially interferes with the ability of market participants to hedge the Index;
- (v) the occurrence of a Market Disruption Event in respect of an Underlying Contract that shares the same Commodity.

The Index Calculation Agent will determine the Index Level under Market Disruption Events in accordance with the following section.

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### INDEX CALCULATION UNDER MARKET DISRUPTION EVENTS

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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 Date  $R$ , a Market Disruption Event with respect to one or more Underlying Contracts occurs (such day, a “Disrupted Holdings Calculation Date” and each such Contract a “Disrupted 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 Date  $R$  is continuing, the 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 sub-paragraphs (ii)-(v) below

$f_{j,t}$  is the settlement price of Underlying Contract  $j$  as of the Index Business Day  $t$

- (ii) The Index Calculation Agent shall determine the Equivalent Holdings and the Equivalent Target Holdings with respect to the Index.

The Equivalent Holdings is the set of holdings  $\{H'_{1,R}, \dots, H'_{m,R}\}$  of Underlying Contracts  $\{F_1 \dots F_m\}$  which perfectly describes the returns of the Index in the time period from the immediately preceding Holdings Calculation Date to the Holdings Calculation Date  $R$ .

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 days following the Disrupted Holdings Calculation Date and until the first subsequent Holdings Calculation Date.

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 immediately following a Disrupted Holdings Calculation Date and until all Market Disruption Events that occurred on the Disrupted Holdings Calculation Date have ceased, the Equivalent Holdings  $\{H'_{1,t}, \dots, H'_{m,t}\}$  are calculated based on the following formula:

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

where:

$TH'_{j,R}$  means the Equivalent Target Holding of Contract  $j$  on Holdings Calculation Date  $R$



$SCH_{j,t}$  means  $\begin{cases} H'_{j,t-1} - TH'_{j,R} & \text{if } j \text{ is a Disrupted Contract; or} \\ 0 & \text{otherwise} \end{cases}$

$H'_{j,t-1}$  means the Equivalent Holding of Contract  $j$  on Index Business Day  $t-1$

- (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 a Disrupted Holdings Calculation Date 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 a Disrupted Holdings Calculation Date, the Index Calculation Agent shall, in good faith, 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 Date shall be the Equivalent Target Holding.
- (vi) On the second consecutive non-disrupted Index Business Day immediately following a Disrupted Holdings Calculation Date, the Index Calculation Agent will resume calculation of the Index in accordance with section 2.

Further explanation of Holdings and Equivalent Holdings:

In respect of any given Index Business Day, the Index is represented as a basket of its Components with a Holding in respect of each Component determined on the immediately preceding Holdings Calculation Date according to the Holdings Calculation section above. For the purposes of determination of whether disruption to futures trading affects the Index, however, the Holdings of the Index must instead be expressed in terms of the futures contracts that ultimately underlie the Index. As the Index is a linear basket of its Components, and because the same holds true of all components of those Components, (whether they themselves are futures or indices), it is possible to work through the Holdings of the Index, and, by ultimately breaking down each Index to the futures contracts that comprise it, determine a new set of Holdings that, in respect of that Index Business Day, exactly represents the composition of the Index in terms of its Underlying Contracts.

## SECTION 4: ALLOCATION OF WEIGHTS

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### Summary of Weighting Methodology:

In accordance with the investment strategy of the Index, the principle behind the weight allocation procedure (*Weighting Methodology*) is to calculate the risk adjusted Yield Difference between the Deferred Contract and the Nearby Contract in respect of each Commodity and to take exposure on Commodities that exhibit a positive Yield Difference. In cases where less than 5 Commodity Groups are represented by the set of Commodities with positive Yield Difference, further Commodities (which either have zero or negative Yield Differences) will be included in the Index, until the Index is represented by at least 5 different Commodity Groups.

Once the target set of Commodities has been determined (the *Selected Commodities*), each Selected Commodity will be allocated an Initial Weight. The Initial Weights are summed by Group (each such sum, an *Initial Group Weight*) and then normalised such that the sum of the weights allocated to each Group represented in the Index is equal to 100%.

The Groups are then subject to an iterative capping procedure whereby the Group with the largest normalised weight is capped at 32% while all remaining Groups are capped at 18%. Any excess weight (above the caps) is distributed in proportion to the remaining uncapped Groups until the weight of each Group is equal to or less than the Group cap (the final Group weights being the *Finalised Group Weights*).

Once the Final Group Weights have been determined, each Selected Commodity is scaled upwards or downwards in proportion to the Initial Weights, such that the sum of the weights of all commodities represented in a Group is equal to that Group's Final Group Weight (and, accordingly, the sum of the Commodity Weights of the Selected Commodities is equal to 100%). Finally, the Commodity Weight of each Selected Commodity is converted into a Weight attributable to the long (nearby for Zinc and deferred for all other Selected Commodities) Component associated with that Commodity and a Weight attributable to the short (deferred for Zinc and nearby for all other Selected Commodities) Component associated with that Commodity.

The Weighting Methodology is outlined in detail in the next sections as follows:

- Section 4.1 describes how the Nearby Yield, Deferred Yield and Yield Difference are calculated;
- Section 4.2 describes how the set of Commodities are selected;
- Section 4.3 describes how the set of Commodity Weights are calculated;
- Section 4.4 describes how the Weights of each Component are derived from the Commodity Weights.

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### SECTION 4.1: YIELD CALCULATION

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For each Commodity, on the Index Business Day prior to the Holdings Calculation Date,  $R$ , for the purpose of the Nearby Yield calculation, if the Nearby Comparison Contract has a **shorter** maturity than the Nearby Contract or for the purpose of the Deferred Yield calculation, if the Deferred Comparison Contract has a **shorter** maturity than the Deferred Contract then:

$$Y_{i,R-1,TYPE} = \left( \frac{PC_{i,R-1,TYPE}}{P_{i,R-1,TYPE}} \right)^{\frac{1}{TimeDiff_{TYPE}}} - 1$$

$$TimeDiff_{TYPE} = (Expiry_{P,TYPE} - Expiry_{PC,TYPE})/365$$

If the Nearby Comparison Contract has a **longer** maturity than the Nearby Contract or for the purpose of the Deferred Yield calculation, if the Deferred Comparison Contract has a **longer** maturity than the Deferred Contract then:

$$Y_{i,R-1,TYPE} = \left( \frac{P_{i,R-1,TYPE}}{PC_{i,R-1,TYPE}} \right)^{\frac{1}{TimeDiff_{TYPE}}} - 1$$

$$TimeDiff_{TYPE} = (Expiry_{PC,TYPE} - Expiry_{P,TYPE})/365$$

Where

$PC_{i,R-1,TYPE}$  is the Settlement Price of the Comparison Contract in respect of the Contract TYPE (either DEFERRED or NEARBY) one Index Business Day prior to the Holdings Calculation Date R

$P_{i,R-1,TYPE}$  is the Settlement Price of the Contract in respect of the Contract TYPE (either DEFERRED or NEARBY) one Index Business Day prior to the Holdings Calculation Date R

$Expiry_{PC,TYPE}$  is the expiry date of the Comparison Contract in respect of the Contract TYPE (either DEFERRED or NEARBY)

$Expiry_{P,TYPE}$  is the expiry date of the Contract in respect of the Contract TYPE (either DEFERRED or NEARBY)

For each Commodity, on the Index Business Day prior to the Holdings Calculation Date,  $R$ , the Yield Difference is calculated according to the formula below:

$$YD_{i,R-1} = SpreadSign_i * (Y_{i,R-1,DEFERRED} - abs(RiskAdjust_{i,R-1}) * Y_{i,R-1,NEARBY})$$

$$RiskAdjust_{i,R-1} = \min \left( -0.75, \max \left( -1.25, -\frac{Std(i, R - 1, Deferred)}{Std(i, R - 1, Nearby)} \right) \right)$$

Where:

$SpreadSign_i$  is the Spread Sign in respect of Commodity  $i$ . The Spread Sign shall be equal to  $-1$  for Zinc, and shall be equal to  $+1$  for each of the other Commodities.

$RiskAdjust_{i,R-1}$  is the Risk Adjustment Factor in respect of Commodity  $i$  one Index Business Day prior to the Holdings Calculation Date R.

$Std(i, R - 1, Deferred)$  is the standard deviation (with one degree of freedom/Bessel's correction) of the daily returns of the Deferred Contract in respect of Commodity  $i$  from (but

excluding) one Index Business Day prior to the previous Holdings Calculation Date to (and including) the Index Business Day prior to the current Holdings Calculation Date  $R$ .

$Std(i, R - 1, \text{Nearby})$  is the standard deviation of the daily returns of the Nearby Contract in respect of Commodity  $i$  from (but excluding) one Index Business Day prior to the previous Holdings Calculation Date to (and including) the Index Business Day prior to the current Holdings Calculation Date  $R$ .

The Risk Adjustment Factor,  $RiskAdjust_{i,R-1}$ , aims to adjust the exposure applied to the Nearby Contract to account for the difference in the volatility between the long exposure (Deferred Contract) and the short exposure (Nearby Contract).

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## SECTION 4.2: DETERMINATION OF SELECTED COMMODITIES

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### Step 1:

On the prior Index Business day with respect to the Holdings Calculation Date  $R$ , the Yield Difference for each of the 8 Commodities are ranked from highest (most positive) to lowest (most negative).

All Commodities that have a **positive** Yield Difference,  $PosCommod_{R-1}$ , are initially selected to be represented in the Index.

### Step 2:

If there are less than 5 Groups represented after the selection process in Step 1 is performed, then additional Commodities are selected in order of descending Yield Difference from the remaining unselected Commodity Groups, until the Index is represented by 5 Groups. In the unlikely scenario where two or more Commodities have the same Yield Difference, the Commodity with the highest Yield Difference calculated on the previous Holdings Calculation Date will be selected first.

If the number of additional Commodities in this step is denoted by  $AddCommod_{R-1}$  then the set of Selected Commodities is:

$$SelectedCommodities_{R-1} = PosCommod_{R-1} \cup AddCommod_{R-1}$$

(Where  $AddCommod_{R-1}$  is empty if the Index is represented by at least 5 Groups after the process in Step 1 is performed.)

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## SECTION 4.3: DETERMINATION OF COMMODITY WEIGHTS

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One Index Business Day prior to the Holdings Calculation Date  $R$ , each Selected Commodity will be assigned an Initial Weight  $IW_{i,R-1}$  corresponding to Commodity  $i$  which is determined with reference to the table under the definition "Initial Weight".

One Index Business Day prior to Holdings Calculation Date  $R$ , each Group  $g$  has associated with it a corresponding Initial Group Weight,  $IGW_{g,R-1}$ , given by the formula below:

$$IGW_{g,R-1} = \sum_{i \in g} IW_{i,R-1}$$

Where:

$IW_{i,R-1}$  is the Initial Weight applied to the Selected Commodity in respect of commodity  $i$  belonging to Group  $g$  one Index Business Day prior to the Holdings Calculation Date  $R$ .

The Initial Group Weights are normalized to add up to 100% (that is, the weights of each Group are scaled in proportion to the Initial Group Weights so that the weights sum to 100%):

$$NGW_{g,R-1} = \frac{IGW_{g,R-1}}{\sum_{g'} IGW_{g',R-1}}$$

Where

$NGW_{g,R-1}$  is the Normalized Group Weight in respect of group  $g$  one Index Business Day prior to the Holdings Calculation Date  $R$ , which are then subject to capping.

The Group with the largest Normalized Group Weight is capped at 32% and all remaining Groups are capped at 18% to produce the set of Final Group Weights ( $FGW_{g,R-1}$ ) in respect of Group  $g$  one Index Business Day prior to the Holdings Calculation Date  $R$ .

If there are two or more Groups with the same largest Normalized Group Weight, the Group that contains the Commodity with the highest Yield Difference will be selected to be capped at 32%. In the unlikely scenario where two or more Commodities from two or more separate Groups have the same maximum Yield Difference, the Group that contains the Commodity with the highest Yield Difference calculated on the previous Holdings Calculation Date will be selected to be capped at 32%.

To achieve this capping, the following iterative procedure is applied.

$Excess = 0$ , immediately before the Iterative Procedure begins.

#### ITERATIVE PROCEDURE

For any Group where the normalized Group weight is greater than the corresponding cap, then:

$$FGW_{g,R-1} = Cap_g$$

$$Excess = Excess + IntGW_{g,R-1} - Cap_g$$

Where

$FGW_{g,R-1}$  is the Final Group Weight in respect of group  $g$  one Index Business Day prior to the Holdings Calculation Date  $R$

$Excess$  is the excess weight that is to be distributed to all remaining uncapped groups as part of this iterative procedure.

$IntGW_{g,R-1}$  is the Interim Group Weight in respect of Group  $g$  one Index Business Day prior to the Holdings Calculation Date  $R$ , and is equal to  $NGW_{g,R-1}$  the first time the iterative procedure is applied and defined below for each subsequent iteration.

$Cap_g$  is equal to 32% if Group  $g$  has the largest Normalized Group Weight and equal to 18% otherwise.

The excess weight is then distributed in proportion to all uncapped Groups as follows

$$IntGW_{u,R-1} = UncappedGW_{u,R-1} + \frac{UncappedGW_{u,R-1}}{\sum_{u=1}^m UncappedGW_{u,R-1}} * Excess$$

$$Excess = 0$$

Where

$UncappedGW_{u,R-1}$  is the uncapped Group Weight in respect of each Group  $u$  one Index Business Day prior to the Holdings Calculation Date  $R$ , that has a weight less than the Cap

$\sum_{u=1}^m UncappedGW_{u,R-1}$  is the sum of all the uncapped Group Weights

The iterative procedure is repeated until the weight of each Group is equal to or less than their corresponding Caps, in which case:

For all Groups that have a weight **less than** their corresponding Cap:  $FGW_{g,R-1} = IntGW_{g,R-1}$

For all Groups that have a weight **equal to** their corresponding Cap:  $FGW_{g,R-1} = Cap_g$

Once the Final Group Weights are determined, each Selected Commodity within the Groups represented in the Index is scaled in proportion to its Initial Weight such that the sum of the Commodity Weights of each Selected Commodity in a particular Group is equal to the Final Group Weight. Thus, for each Group  $g$  represented in the Index, the Commodity Weight  $CW_{i,g,R-1}$  in respect of each Commodity  $i$  one Index Business Day prior to the Holdings Calculation Date  $R$ , is given by:

$$CW_{i,g,R-1} = \left( IW_{i,R-1} \div \sum_{j \in g} IW_{j,R-1} \right) * FGW_{g,R-1}$$

Where  $\sum_{j \in g} IW_{j,R-1}$  is the sum of all Initial Weights of each Commodity  $j$  in Group  $g$

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#### SECTION 4.4: DETERMINATION OF COMPONENT WEIGHTS

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Lastly, the set of Component Weights,  $\{W_{1,R}, \dots, W_{n,R}\}$  on the Holdings Calculation Date  $R$  is defined as follows:

$$W_{i,R} = \begin{cases} 0 & \text{if } Commodity_i \notin SelectedCommodities_{R-1} \\ SpreadSign_i * CW_{i,g,R-1} & \text{if } Commodity_i \in SelectedCommodities_{R-1} \text{ and } Component_i \text{ Type is Deferred} \\ SpreadSign_i * RiskAdjust_{i,R-1} * CW_{i,g,R-1} & \text{if } Commodity_i \in SelectedCommodities_{R-1} \text{ and } Component_i \text{ Type is Nearby} \end{cases}$$

For avoidance of doubt,  $CW_{i,g,R-1}$  will be a positive number and  $RiskAdjust_{i,R-1} * CW_{i,g,R-1}$  will be a negative number.

## CONTACTS

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