UBS Bloomberg CMCI

(Constant Maturity Commodity Index)

Technical Document

Last updated: November 2018

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Bloomberg

The UBS Bloomberg CMCI

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Executive Summary

CMCI is diversified across a range of commodities and is international in its scope on order to try to reflect the global commodities market and includes derivative instruments traded in markets in various countries. In addition, the CMCI family includes indices with different tenor.

CMCI is designed to provide diversity across commodity maturities. A weighted average amount, calculated through the use of a weight function of relative curve liquidity, is deemed to be invested into each available Standard Constant Maturity ("**SCM**") and those weightings are maintained by monthly rebalancing.

CMCI is governed by the Index Administrator via its internal processes. The Index Administrator controls the creation and operation of the CMCI administrative process, including all stages and processes involved in the production and dissemination of the CMCI. Notwithstanding that the CMCI relies on information from third party sources, the Index Administrator has primary responsibility for all aspects of the Index administration and determination process.

Historical records relating to the composition, past performance and methodology of the CMCI ("**Methodology**") is available on the Bloomberg Page CUBS <GO>, and on the UBS Website.

CMCI has been established and designed only for the purpose of seeking to achieve the objective stated in this Technical Document. Whilst the CMCI has been designed to operate as a general benchmark for the wider commodities market, the Index Administrator will have certain discretion in choosing commodity future contracts as eligible components from which actual components will be selected on each rebalancing day. The level of the CMCI will be a function of the price, level or value of components comprised in the CMCI. In the absence of a Market Disruption Event Day or a Market Emergency and Force Majeure Event, as defined in 3.6.2 and 3.7, the level of the CMCI will be calculated in accordance with the formulae in the Methodology (including in circumstances where the market for a component of the CMCI is illiquid or fragmented).

If the Index Administrator is required or entitled to make a determination in relation to the CMCI pursuant to the Methodology and that determination involves the exercise of discretion with respect to the use of data in determining the level of the CMCI, then the Index Administrator will exercise 'Expert Judgment' as define in Section 1.1.

As further described below, the Index Administrator will review the Methodology on an annual basis to evaluate whether the Index Methodology continues to achieve its objectives.

The UBS Bloomberg BCOM Constant Maturity Index and the UBS Bloomberg SPGSCI Constant Maturity Commodity Index are each related to the CMCI family of indices. Schedule 1 and Schedule 2 of this Technical Document contain the Technical Document in respect of the UBS Bloomberg BCOM Constant Maturity Index dated as of 17 July 2014 and the Technical Document in respect of the UBS Bloomberg SPGSCI Constant Maturity Commodity Index dated as of 17 July 2014, respectively.

Summary of Index characteristics

The below is a summary of the characteristics of the CMCI Index, and is subject to the more detailed provisions set out herein.

- The CMCI Index is a commodity basket, subject to change from time to time, currently composed of 5 commodity groups with 29 components representing 23 commodities (as of 1 August 2018), with the exposure diversified between a number of tenors, ranging from 3 Months to 3 Years, subject to liquidity;
- One composite index (the CMCI), one sub index per commodity group and as many single component indices as there are commodity components;
- Arithmetic averaging;
- Price Index (PI), Excess Return (ER) and Total Return (TR) indices are published daily;
- Each index is calculated in USD;
- Each Index is published to 3 decimal places; and
- Currency-hedged indices have been introduced to facilitate CMCI investment in currencies other than the US Dollar.

Tenors

- The CMCI is calculated for specified Standard Constant Maturities (SCM): 3 months (3M), 6 months (6M), 1 year (12M), 2 years (24M) and 3 years (36M) for each index series; and
- CMCI is available as a single tenor index (i.e. CMCI 1 Year, CMCI 3 Months etc.) or as a Benchmark Index, weighted across all available CMCI tenors.

Weighting engine

- The weighting engine (which determines the composition and component weights of the CMCI) is based on a blending of Fundamental Weights and Liquidity Weights and is designed to be compliant with the 35/20 capping rules implemented under UCITS IV:
  - Fundamental Weights are derived from a combination of primary economic indicators such as CPI, PPI, and GDP, as well as commodity-level consumption data,
  - Liquidity Weights are obtained from a combination of Open Interest and Volume data, as reported on the relevant exchanges,
  - By basing on both Fundamental and Liquidity Weight, the Target Weights (TW) are designed to reflect the economic significance and market liquidity for each commodity in the Index,
  - The Target Weights (TW) of each relevant component in the Index will be subject to weight capping under the 35/20 rules under UCITS IV,
  - Fundamental Weights are revised annually during the first half with changes effected during the July Maintenance Period. Liquidity Weights are also revised annually and effective during the July Maintenance Period. As a result, the Target Weights are potentially revised every year;
- The Index Administrator reviews the Index at least annually prior to the Index rebalancing. Changes, if any, are effected during the following July Maintenance Periods;
- The Index re-balances monthly over the last three CMCI Business Days of the month and according to the last defined Target and Tenor Weights; and
- The Tenor Weights of the CMCI Benchmark Index are a function of relative liquidity along the respective forward curves.

Exceptional maintenance events

- In some circumstances, the Index Administrator may declare an event of Force Majeure or an Extraordinary Circumstance and can take any actions that it deems to be necessary or appropriate for the maintenance of the Index and the realization of the objectives of the Index, even if such actions are not specifically provided for under the Index procedure. Any such actions might be taken with immediate effect.
- All changes to the Index are proposed by the Index Administrator and material changes are approved by the PROC governance committee and may require stakeholder consultation, as further discussed below.

Index composition
As of August 1st, 2018 the Index components are shown in Table I.

TABLE I. INDEX COMPONENTS

Commodity	Exchange	Contract Code (Bloomberg)	2018 Composite TW%	2018 Per Sector TW%	2017 Composite TW%	2017 Per Sector TW%
WTI Crude Oil 1	NYMEX	CL	10.0745%	29.2389%	9.4085%	28.1251%
Brent Crude Oil	ICE	CO	9.5846%	27.8171%	9.4537%	28.2602%
ULS Diesel	NYMEX	HO	3.4066%	9.8869%	3.3620%	10.0501%
Low Sulfur Gasoil	ICE	QS	3.7632%	10.9218%	3.6027%	10.7697%
RBOB Gasoline	NYMEX	XB	4.1495%	12.0430%	4.1677%	12.4586%
HHUB Natural Gas	NYMEX	NG	3.4774%	10.0924%	3.4577%	10.3362%
			34.4558%	**100.0000%**	**33.4523%**	**100.0000%**
Copper	LME	LP	8.3679%	30.6273%	8.5235%	32.0937%
High Grade Copper	COMEX	HG	4.3166%	15.7992%	3.8568%	14.5221%
Zinc	LME	LX	3.6339%	13.3004%	3.1716%	11.9421%
Aluminium	LME	LA	6.7989%	24.8846%	6.7856%	25.5499%
Nickel	LME	LN	2.6707%	9.7750%	2.7188%	10.2371%
Lead	LME	LL	1.5337%	5.6135%	1.5019%	5.6551%
			27.3217%	**100.0000%**	**26.5582%**	**100.0000%**
Gold 1	COMEX	GC	4.9975%	81.8994%	5.0256%	81.0633%
Silver	COMEX	SI	1.1045%	18.1006%	1.1740%	18.9367%
			6.1020%	**100.0000%**	**6.1996%**	**100.0000%**
SRW Wheat	CBOT	W	1.7851%	6.3629%	1.8379%	6.2240%
HRW Wheat	BOT	KW	1.0780%	3.8425%	1.0209%	3.4572%
Corn	CBOT	C	4.5109%	16.0788%	4.6362%	15.7003%
Soybeans	CBOT	S	5.6196%	20.0307%	5.9875%	20.2765%
Soybean Meal	CBOT	SM	2.1325%	7.6011%	2.0860%	7.0642%
Soybean Oil	CBOT	BO	1.3356%	4.7606%	1.3938%	4.7201%
Sugar No. 11	NYBOT	SB	4.3726%	15.5858%	4.8697%	16.4911%
Sugar #5	EN	QW	2.5013%	8.9157%	2.5843%	8.7516%
Coffee "C"	NYBOT	KC	1.2554%	4.4748%	1.3164%	4.4579%
Cotton No.2	NYBOT	CT	1.4508%	5.1713%	1.3864%	4.6950%
Milling Wheat	EN	CA	0.6876%	2.4509%	0.7264%	2.4599%
Cocoa	ICE	CC	0.6896%	2.4580%	0.8170%	2.7667%
London Cocoa	ICE	QC	0.6360%	2.2670%	0.8668%	2.9354%
			28.0550%	**100.0000%**	**29.5293%**	**100.0000%**
Live Cattle	CME	LC	2.5650%	63.0919%	2.7300%	64.0755%
Lean Hogs	CME	LH	1.5005%	36.9081%	1.5306%	35.9245%
			4.0655%	**100.0000%**	**4.2606%**	**100.0000%**

Source: Bloomberg

Table II.A. Individual Tenor Weights of CMCI Benchmark, as % of 100% for 2018

Component/ Quoted SCM	Code	3M	6M	1Y	2Y	3Y
WTI Crude Oil	CL	43.004%	22.296%	18.464%	10.201%	6.033%
Brent Crude Oil	CO	43.103%	22.081%	17.118%	11.068%	6.628%
ULS Diesel	HO	57.569%	26.857%	15.572%	-	-
Low Sulfur Gasoil	QS	65.341%	34.658%	-	-	-
RBOB Gasoline	XB	69.116%	30.883%	-	-	-
Natural Gas	NG	48.090%	29.276%	22.633%	-	-
LME Copper	LP	40.972%	23.805%	19.549%	9.8573%	5.816%
High Grade Copper	HG	72.840%	27.159%	-	-	-
LME Zinc	LX	52.002%	29.445%	18.551%	-	-
LME Aluminum	LA	38.795%	23.706%	19.573%	11.6224%	6.3027%
LME Nickel	LN	53.3428%	29.4494%	17.2078%	-	-
LME Lead	LL	56.8242%	27.6199%	15.5559%	-	-
Gold	GC	70.5590%	17.9301%	11.5109%	-	-
Silver	SI	72.5413%	16.8169%	10.6418%	-	-
SRW Wheat	W	56.2638%	28.4442%	15.2920%	-	-
HRW Wheat	KW	63.7971%	36.2029%	-	-	-
Milling Wheat	CA	54.9649%	45.0351%	-	-	-
Corn	C	52.1757%	30.6080%	17.2163%	-	-
Soybeans	S	55.6391%	29.1612%	15.1997%	-	-
Soybean Meal	SM	63.9932%	36.0068%	-	-	-
Soybean Oil	BO	64.6513%	35.3487%	-	-	-
Sugar No.11	SB	47.5755%	32.0109%	20.4136%	-	-
Sugar #5	QW	64.9217%	35.0783%	-	-	-
Coffee “C”	KC	56.4031%	27.9720%	15.6249%	-	-
Cotton No.2	CT	61.6318%	38.3682%	-	-	-
Cocoa	CC	64.7890%	35.2110%	-	-	-
London Cocoa	QC	55.9592%	44.0408%	-	-	-
Live Cattle	LC	62.6864%	37.3136%	-	-	-
Lean Hogs	LH	63.2096%	36.7904%	-	-	-

Source: Bloomberg

Table II.B. Individual Tenor Weights of CMCI Benchmark, as % of Target Weights for 2018

Component/ Quoted SCM	Code	3M	6M	1Y	2Y	3Y	Total (Target Weight %)
WTI Crude Oil	**CL**	4.3325%	2.2463%	1.8602%	1.0277%	0.6078%	**10.0745%**
Brent Crude Oil	**CO**	4.1313%	2.1164%	1.6407%	1.0609%	0.6353%	**9.5846%**
ULS Diesel	**HO**	1.9612%	0.9149%	0.5305%	-	-	**3.4066%**
Low Sulfur Gasoil	**QS**	2.4589%	1.3043%	-	-	-	**3.7632%**
RBOB Gasoline	**XB**	2.8680%	1.2815%	-	-	-	**4.1495%**
Natural Gas	**NG**	1.6723%	1.0181%	0.7871%	-	-	**3.4774%**
LME Copper	**LP**	3.4285%	1.9920%	1.6358%	0.8248%	0.4867%	**8.3679%**
High Grade Copper	**HG**	3.1442%	1.1724%	-	-	-	**4.3166%**
LME Zinc	**LX**	1.8897%	1.0700%	0.6741%	-	-	**3.6339%**
LME Aluminum	**LA**	2.6377%	1.6117%	1.3308%	0.7902%	0.4285%	**6.7989%**
LME Nickel	**LN**	1.4246%	0.7865%	0.4596%	-	-	**2.6707%**
LME Lead	**LL**	0.8715%	0.4236%	0.2386%	-	-	**1.5337%**
Gold	**GC**	3.5262%	0.8961%	0.5753%	-	-	**4.9975%**
Silver	**SI**	0.8012%	0.1857%	0.1175%	-	-	**1.1045%**
SRW Wheat	**W**	1.0044%	0.5078%	0.2730%	-	-	**1.7851%**
HRW Wheat	**KW**	0.6877%	0.3903%	-	-	-	**1.0780%**
Milling Wheat	**CA**	0.3779%	0.3097%	-	-	-	**0.6876%**
Corn	**C**	2.3536%	1.3807%	0.7766%	-	-	**4.5109%**
Soybeans	**S**	3.1267%	1.6387%	0.8542%	-	-	**5.6196%**
Soybean Meal	**SM**	1.3647%	0.7678%	-	-	-	**2.1325%**
Soybean Oil	**BO**	0.8635%	0.4721%	-	-	-	**1.3356%**
Sugar No.11	**SB**	2.0803%	1.3997%	0.8926%	-	-	**4.3726%**
Sugar #5	**QW**	1.6239%	0.8774%	-	-	-	**2.5013%**
Coffee "C"	**KC**	0.7081%	0.3512%	0.1962%	-	-	**1.2554%**
Cotton No.2	**CT**	0.8942%	0.5566%	-	-	-	**1.4508%**
Cocoa	**CC**	0.4468%	0.2428%	-	-	-	**0.6896%**
London Cocoa	**QC**	0.3559%	0.2801%	-	-	-	**0.6360%**
Live Cattle	**LC**	1.6079%	0.9571%	-	-	-	**2.5650%**
Lean Hogs	**LH**	0.9485%	0.5520%	-	-	-	**1.5005%**

Source: Bloomberg

Sourcing the CMCI

The CMCI Website: the CMCI Website is accessible via the following links: www.ubs.com/cmci **(the "CMCI Website")** http://www.bloombergindices.com/ubs-bloomberg-cmci-index-family/

BISL is committed to very high standards of transparency for any of benchmarks it administers and the CMCI Website is accessible for the general public with no restrictions. It provides comprehensive index information, technical document(s), presentation materials, and special announcements.

Bloomberg Terminal: Real time and settlement Index prices as well as important static data and related information are made available on Bloomberg Terminal® page **CUBS <GO>**, **CMCX <GO>** and **CMCN <GO>** (the "**Bloomberg Page**"). Bloomberg Tickers for CMCI USD Indices are constructed as shown in Table III.

Notable Changes to Index Methodology

This list is not intended to be an exhaustive list of changes.

Date	Summary of Updates	Updated by
December 2018	Section 3.4.2 Available Reference Rates was updated to include the SGD	Ken Hoefling
November 2018	Section 1.1 Index Policy and Procedures was updated to include language pertaining to index data and reviews, limitations to the index, and index administrator transparency.	Ken Hoefling
August 2018	Index Characteristics Table to reflect the 2018/2019 Composition, Index target Weights, and Individual tenor weights.	Ken Hoefling
January 2018	Effective 2 January 2018, the TOIS fixing was replaced with the SARON (Swiss Average Rate Overnight) fixing in the calculation of Swiss franc daily-hedged total return indices.	Ken Hoefling

Contact details

Bloomberg Index Services Limited

3 Queen Victoria Street

London EC4N 4TQ

United Kingdom

Attn: BISL Compliance
https://www.bloomberg.com/professional/product/indices/

UBS AG

UBS, Index Group
1 Finsbury Avenue,
EC2M 2PP
London,
U.K.
+44-20-7567-5317

www.ubs.com/cmci

1. The Purpose of the CMCI Technical Document

This Technical Document provides further detail on the mechanisms that determine the structure of the CMCI.

The CMCI is designed as a tradable benchmark for global investment in the commodity markets. The weighting of the CMCI is built primarily on the basis of generic economic indicators such as GDP, CPI, PPI etc., but is also subject to a number of other secondary factors based on liquidity (such as market volume and open interest) as further described herein). All weightings of the CMCI are subject to the 35/20 capping rules under UCITS IV.

Further, the Index Administrator is aware that no mechanisms can predict the changes that will most likely affect commodity markets in the future. The high international political focus, changing global demand combined with the volatility of supply and demand data make it impossible for the Index Administrator to foresee all changes.

Therefore, the Index Administrator uses publicly available resources and research to allow this technical framework to evolve when market shifting events occur, with the aim of maintaining the CMCI's stability and accurate representation of commodity markets.

1.1. Index Policy and Procedures

The CMCI indices are rules-based, and their construction is designed to consistently produce Index Levels without the exercise of discretion. The Indices are produced without the interpolation or extrapolation of input data.

In addition, the Index Administrator seeks to avoid contributions of input data that may be subject to the discretion of the source of such data and instead seeks to use input data that is readily available and/or distributed for a number of non-index or benchmark creation purposes. Accordingly, the Indices require no 'contributors' to produce and no codes of conduct with any such sources are required.

Index and Data Reviews

The Index Administrator will review the Indices (both the rules of construction and data inputs) on a periodic basis, not less frequently than annually, to determine whether they continue to reasonably measure the intended underlying market interest, the economic reality or otherwise align with their stated objective. More frequent reviews may result from extreme market events and/or material changes to the applicable underlying market interests.

Criteria for data inputs include reliable delivery and active underlying markets. Whether an applicable market is active depends on whether there are sufficient numbers of transactions (or other indications of price, such as indicative quotes) in the applicable constituents (or similar underlying constituent elements) that a price (or other value, as applicable) may be supplied for such constituent(s). There are no minimum liquidity requirements for Index constituents and/or minimum requirements or standards for the quantity or quality of the input data.

The review will be conducted by product managers of the Indices in connection with the periodic rebalancing of the Indices or as otherwise appropriate.

Any resulting change to the Methodology deemed to be material (discussed below) will be subject to the review of the PROC (defined below) under the oversight of the BOC (defined below), each of which committees shall be provided all relevant information and materials it requests relating to the change. Details regarding the PROC and BOC are described in Section 1.2 - Benchmark Governance, Audit and Review Structure.

Material changes will be reflected and tracked in updated versions of this Methodology.

In determining whether a change to an Index is material, the following factors shall be taken into account:

- The economic and financial impact of the change;
- Whether the change affects the original purpose of the Index; and/or
- Whether the change is consistent with the overall objective of the Index and the underlying market interest it seeks to measure

In the event of a material change at least 20 Index Administrator Business Days in advance of the proposed material change taking effect (such period the **"Index Modification Consultation Period"**). Such details will be published on the Bloomberg Page and/or on the CMCI Website. During the Index Modification Consultation Period, Product Investors may provide comments to the Index Administrator and/or UBS in relation to the impact of the material change. Following the expiry of the Index Modification Consultation Period the Index Administrator will make available the summary of any comments received from Product Investors in relation to the material change, and the summary of the Index Administrator's responses to such comments, on the Bloomberg Page and/or the CMCI Website (unless the relevant Product Investor has requested confidentiality). The Index Administrator will take into account (but shall not be obliged to follow) any comments received from Product Investors during the Index Modification Consultation Period in relation to the implementation of any proposed material change.

BISL's Index administration is also subject to Bloomberg's Compliance function which periodically reviews various aspects of its businesses in order to determine whether it is adhering to applicable policies and procedures, and assess whether applicable controls are functioning properly.

Termination

The Index Owner may, in its sole and absolute discretion, but subject to the Index Administrator's termination policies and applicable law, direct the Index Administrator to terminate the calculation and publication of the CMCI level. If the Index Owner proposes to direct the Index Administrator to terminate the calculation and publication of the CMCI level, then (i) the Index Administrator will give (and the Index Owner will permit) at least 20 Index Administrator Business Days' notice of such termination by publication on the Bloomberg Page and/or on the CMCI Website and (ii) in such notice specify if there will be any transition process in relation to the termination of the calculation and publication of the CMCI level and, if so, invite Product Investors to provide comments on the proposed transition process within such time period as may be specified by the Index Administrator (the "**Index Transition Consultation Period**"). During the Index Transition Consultation Period, Product Investors may provide comments to the Index Administrator and/or UBS in relation to the proposed transition process. Following the expiry of the Index Transition Consultation Period, the Index Administrator will make available a summary of any comments received from Product Investors in relation to the proposed transition process, and a summary of the Index Administrator's responses to such comments, on the Bloomberg Page and/or on the CMCI Website (unless the relevant Product Investor has requested confidentiality). The Index Administrator will take into account (but shall not be obliged to follow) any comments received from Products Investors during the Index Transition Consultation Period. The Index Administrator will make available any transition process in relation to the termination of the calculation and publication of the CMCI level on the Bloomberg Page and/or on the CMCI Website.

Restatements Policy

BISL strives to provide accurate calculation of its indices. However, to the extent a material error in index values is uncovered following publication and dissemination, a notification will be sent to index owners alerting them of such error and the expected date of a revised publication, if warranted.

BISL considers the following factors to determine whether to restate. Not all conditions need to be present to warrant a restatement, and certain factors may be more determinative that others depending on the circumstances of the given error.

- The relative importance of the data field impacted by the error;
- When the error occurred and when it was discovered;
- The number of indices and sub-indices affected;
- Whether the impacted indices are linked to tradable products;
- The magnitude of the error;
- The burden of restatement on client re-processing relative to the impact of the error;
- The impact of the restatement on analytical tools.

Stress Events

In the event of an unforeseen market event whereby the commodity market is unexpectedly closed, the prior day's settlement prices will be used for underlying futures contracts. If a commodity futures contract settlement prices is unavailable for more than five consecutive business days, escalation will be made to the PROC. Any such removal of a commodity future contract will be subject to PROC review.

Expert Judgment

BISL may use expert judgment with regards to the following:
- Index restatements
- Extraordinary circumstances during a market emergency
- Data interruptions, issues, and closures

When expert judgment is required, BISL undertakes to be consistent in its application, with recourse to written procedures outlined in this Methodology and internal procedures manuals. In certain circumstances exercises of expert judgment are reviewed by senior members of BISL management and Bloomberg Compliance teams, and are reported to the PROC. BISL also maintains and enforces a code of ethics to prevent conflicts of interest from inappropriately influencing index construction, production, and distribution, including the use of expert judgment.

Dividends and coupon payments

Dividends and coupon payments play no role in this Methodology, and are therefore not accounted for by the Index.

1.2. Benchmark Governance, Audit, and Review Structure

BISL uses two primary committees to provide overall governance and effective oversight of its benchmark administration activities:

- The Product, Risk & Operations Committee ("**PROC**") provides direct governance and is responsible for the first line of controls over the creation, design, production and dissemination of benchmark indices, strategy indices and fixings administered by BISL, including the Indices. The PROC is composed of Bloomberg personnel with significant experience or relevant expertise in relation to financial benchmarks. Meetings are attended by Bloomberg Legal & Compliance personnel. Nominations and removals are subject to review by the BOC, discussed below.

- The oversight function is provided by Bloomberg's Benchmark Oversight Committee ("**BOC**"). The BOC is independent of the PROC and is responsible for reviewing and challenging the activities carried out by the PROC. In carrying out its oversight duties, the BOC receives reports of management information both from the PROC as well as Bloomberg Legal & Compliance members engaged in second level controls.

On a quarterly basis, the PROC reports to the BOC on governance matters, including but not limited to client complaints, the launch of new benchmarks, operational incidents (including errors & restatements), major announcements and material changes concerning the benchmarks, the results of any reviews of the benchmarks (internal or external) and material stakeholder engagements.

CMCI Annual Index Review

During the CMCI Annual Index Review, key market participants and other influential individuals are invited to assist BISL in setting index priorities, to discuss potential rules changes and to provide ideas for new products. These reviews are generally constituted on an annual basis. While potential benchmark changes are discussed through this process, all feedback received is non-binding and all final decisions are made by the PROC (subject to BOC review) after the review period has ended.

Internal and External Reviews

BISL's Index administration is also subject to Bloomberg's Compliance function which periodically reviews various aspects of its businesses in order to determine whether it is adhering to applicable policies and

procedures, and assess whether applicable controls are functioning properly. In addition, Bloomberg may from time to time appoint an independent external auditor with appropriate experience and capability to review adherence to benchmark regulation. The frequency of such external reviews will depend on the size and complexity of the operations and the breadth and depth of the Index use by stakeholders.

1.3. Conflicts of Interest

The CMCI confers on the Index Administrator discretion in making certain determinations, calculations and corrections from time to time. The role played by BISL, as Index Administrator and the exercise of the kinds of discretion described above could present it with conflicts of interest. The Index Administrator does not have any obligation to take the needs of any Product Investor into consideration at any time. It is also not itself an issuer or counterparty of Products. UBS, its affiliates and its subsidiaries may each face conflicts between the roles it performs as Index Owner in respect of the CMCI and its own interests. In particular, in its other businesses, UBS may have, or enter into transactions to create, a physical, economic or other interest (including an adverse and/or short interest, as the case may be) in the CMCI, any Product, any component of the CMCI, any investments referenced by or linked to any component of the CMCI or any other related investments and may exercise remedies or take other action with respect to its interests as it deems appropriate.

The following actions could adversely affect the CMCI level:

- UBS may actively trade Products, any component of the CMCI, any investments referenced by or linked to any component of the CMCI and any other related investments. These activities could adversely affect the CMCI level, which could in turn affect the return on, and the value of, any Products.

- UBS may have access to information relating to the CMCI, any Product, any component of the CMCI, any investments referenced by or linked to any component of the CMCI or any other related investments. UBS is not obliged to use that information for the benefit of any person acquiring or entering into any Products.

- UBS, its affiliates and other parties may issue, underwrite, trade or enter into, as applicable, securities, financial or derivative instruments or other investments referenced to the CMCI or any component of the CMCI. An increased level of investment and trading in these securities, financial or derivative instruments or investments may negatively affect the performance of the CMCI and could adversely affect the CMCI level and, therefore, the amount payable at maturity on any Products and the value of any such products before that date.

- Although UBS is not obliged to do so, it may elect to hedge its exposure to the CMCI, any Product, any component of the CMCI, any investments referenced by or linked to any component of the CMCI or any other related investments with an affiliate or a third party. Such affiliate or third party, in turn, is likely to directly or indirectly hedge any or all of its exposure, including through transactions taking place on the futures and/or options markets. Where UBS or such affiliate or third party chooses to hedge its exposure, it may adjust or unwind such hedges by purchasing or selling Products, components of the CMCI, products linked to any component of the CMCI, any investments referenced by or linked to any component of the CMCI or any other products on or before the date that the CMCI is valued for the purposes of any Product. UBS or such affiliate or third party may also enter into, adjust or unwind hedging transactions relating to other instruments linked to the CMCI or any component of the CMCI. Any such hedging activity may adversely affect the CMCI level, which could in turn affect the return on, and the value of, any Products.

- Certain activities conducted by UBS may conflict with the interests of those acquiring or entering into Products. For example, as described above, UBS may elect to hedge its obligations, if any, with an affiliate or a third party. It is possible that UBS could receive substantial returns with respect to these activities while the value of a Product may decline.

- UBS may also engage in trading for its proprietary accounts, for other accounts under its management or to facilitate transactions, including block transactions, on behalf of customers relating to one or more Products, products linked to any component of the CMCI, any investments referenced by or linked to any component of the CMCI and/or any other related investments. In the course of these transactions, UBS's customers may receive information about the CMCI before it is made available to other Product Investors. Any of these activities could also adversely affect the CMCI level directly or indirectly by affecting the value of any component of the CMCI, any investments referenced by or linked to any component of the CMCI or any other related investments and, therefore, the amount paid at maturity on any Products and the value

of any such products before that date.

- UBS, its affiliates and other parties may issue, underwrite, trade or enter into, as applicable, securities or financial or derivative instruments with returns linked or related to changes in the performance of the CMCI, any Product, any component of the CMCI, any investments referenced by or linked to any component of the CMCI or any other related investments, which might compete with the Products. By introducing competing products into the marketplace in this manner, UBS could adversely affect the amount paid at maturity, redemption or termination of any Products and the value of any such Products before that date. To the extent that UBS serves as issuer, underwriter, trader or counterparty of those securities or instruments, its interests with respect to those securities or instruments may be adverse to the interests of a holder of any Products.

1.4. Summary of Index Key Terms

1.4.1. Index calculation terms

AF	Adjusting Factor, the factor applied to either CTEW or ITW in the procedure leading to the calculation of the new TWAFs
ARR	For any CMCI Business Day, the Available Reference Rate is the rate of interest used to calculate the interest component of the TR index
ARRA & ARRS	Available Reference Rate Adjustment and Available Reference Rate Scalar, which represent the rate adjustment and the scalar factor, respectively, used in connection with the calculation of the TR index, - when applicable - to reflect any particular funding cost or rate differential applicable and associated with an ICR for an A+/A-1 (S&P) and/or Aa3/P-1 (Moodys) issuer. The ARRA and ARRS can change periodically to reflect market conditions
BV	Basket Value, the sum of Daily Component Values (DCV) of any combination of index components that comprise the CMCI Composite Index or any sub- index
BVF	Basket Value Final
BVI	Basket Value Initial
BVR	Basket Value Ratio, a ratio in use on the day prior to the first maintenance (re- weighting/re-balancing) periods and used in order to maintain continuity of the Index during those transition periods
caldays	Non CMCI business days between two consecutive Business Days, counted in calendar days. It is used to accrue the TR index on non CMCI Business Days
CCV	Component Curve Value, for a given component of the CMCI Benchmark Index, the sum for each eligible SCM of, the product of (1) the currency adjusted Daily Constant Maturity Forward Price (XDCMFP) with, (2) the Component Nominal Weight (CNW), with (3) the Tenor Weight Adjusting Factor (TWAF), with (4) the Index composition binary factor (IsIn)
CCYScalar	The adjusting factor used in connection with the foreign currency conversion into U.S. Dollars of non-U.S. Dollar denominated contract
CMB	Constant Maturity Boundary, for each component in the CMCI, the maximum tenor of each SCM. The CMB will be the SCM when the SCM tenor extends out beyond tradable maturity
CMCI Business Day	A day on which at least 50% of the CMCI Target Weights of the Index are available to trading
CMF	Constant Maturity Forwards

CNW	Component Nominal Weights, the nominal weights calculated on the business day preceding the start of the Maintenance Period prior to each Maintenance Period and such that on such day at close of business, the effective weights are equal to target weights for the following CMCI month
CP	Contract Proportion, used to determine the allocation of the index between two delivery months of the same contract in order to maintain a constant maturity exposure from the contracts included in the CMCI, and defined on a daily basis in reference to two Middle of Delivery Periods (MDP1 and MDP2) and a Daily Constant Maturity Date (DCMD). The CP represent the weighting scheme (cf. CP1, CP2) for the contracts used to build the Daily Constant Maturity Forward Price (DCMFP)
CTEW	Component Tenor Effective Weights, the effective weighting invested on a given commodity component and eligible Standard Constant Maturity
CY	Carry Yield
CV	Curve Value, the sum of Curve Component Values (CCV) of any combination of index components that comprise the CMCI Benchmark Composite Index or any sub-index
CVF	Curve Value Final, see CV
CVI	Curve Value Initial, see CV
CVR	Curve Value Ratio, a ratio in use on the day prior to the first maintenance (re- weighting/re-balancing) period in order to maintain continuity of the Index during those transition periods
DCNP	Daily Contract Nearby Price, the daily contract reference price used in the calculation of the DCMFP, and defined for each component by the ENC list (cf. DCNP1,DCNP2)
DCV	Daily Component Value, the product, for a given component of the CMCI, of (1) the currency adjusted Daily Constant Maturity Forward Price (DCMFP) with, (2) the Component Nominal Weight (CNW)
DEW	Daily Effective Weight, the ratio of – for each component – (1) the Daily Component Value(DCV) and, (2) the Basket Value(BV)
DITRF	Daily Interest-Rate Total Return Formula (please see Section 3.4 for details), including Interest Rate Return(IRR) and Index Daily Return(IDR)
DOMW	Daily Open Market Weight, which reflects the weight of a contract in the CMCI on a given day, and is equal to the sum of, (1) Daily Effective Weight (DEW) multiplied by, (2) OPEN, the Open markets binary factors taking the value 1 when the market for the relevant index component is open for trading, and 0 when it is closed. When all markets are open for trading on a given CMCI Business Day, the DOMW is equal to 100%
DRR	For any CMCI Business Day, the product of (1) the ARRS and (2) the sum of the Available Reference Rate (ARR) and the Available Reference Rate Adjustment (ARRA)
DTOIQ	Daily Total Open Interest Quantity as reported by the exchange facility on which the component is traded and/or to which such component is associated, and measured as the Total number of Open interest on all traded contracts or maturities multiplied by the number of units of such commodity per contract
DTVQ	Daily Total Volume Quantity, which is measured as the number of contracts exchanged between buyers and sellers multiplied by the number of units of commodity per contract
EMEL	Exchange& Market Eligibility List
Eligible Tenor	See SCM
ENC	Eligible Nearby Contracts, the contracts on a particular commodity that are included in the calculation of a DCMFP for a given SCM

ER	Excess Return Index, measures for a given basket composition and Standard Constant Maturity, the uncollateralized returns of the CMCI basket components associated with the designated segment of forward curve
ETW	Equal Tenor Weights, for a given component, the weight obtained from the simple equal weight allocation process
FX	FX is the Foreign Currency Rate used to convert a component value expressed in its original currency to the currency in which the Index is quoted. The expression of FX is given according to market standard and practices and adjusted by the CCY factor defined for each CCY pair For the direct rate quotes, the price source is set to Bloomberg on page CCY F143 Crncy HP <GO> (Note the Location Time zone is set to "New-York"). This states that the Fixing prices are captured at 2:30pm EST
ICR	Index Currency Reference, the currency in which the Index is quoted: USD, EUR
IDR	Index Daily Return, the daily composite basket return weighted appropriately by Rebalancing Proportions (RP) and CNWs to reflect assets held from one CMCI Business Day to the next
IRR	Interest Rate Return, the return reflecting the fixed income performance of the Index in its designated currency from one CMCI Business Day to the next. The IRR is expressed as a scalar factor and is compounded with the IDR to produce the Daily Index Total Return Factor (DITRF). The mathematical expression of IRR is a function of the rate type which is a function of ICR
MDP	Middle of Delivery Period, a fixed date associated, for each component, to each Futures/Forward contract allowing the calculation of DCMFP (please see Section 3 for details, cf MDP1, MDP2)
MF	Maintenance Factor, a scalar factor used to maintain the continuity of the Price Index during Maintenance Periods (re-weighting, rebalancing)
Maintenance Period	Monthly period over the last three CMCI Business Days during which CMCI rebalances or rolls into new Target Weights. Please note that July Maintenance Period refers to last three CMCI Business Days of July.
OPEN	Open markets binary factors taking the value 1 when a market is open, and 0 when it is closed
PI	Price Index, for a given basket composition and Standard Constant Maturity (SCM), the measure of the basket price level associated with the designated segment of the forward curve
PY	Price Yield
RP	Rebalancing Proportions (RP), the factors used in the calculation of the Index with function to weight each day in the Maintenance Period over which the Index goes from Old to New CNWs and MFs (cf RP1, RP2)
RY	Roll Yield
SCM	Standard Constant Maturity, a maturity tenor for which the CMCI is calculated
Tenor	See SCM
TR	Total Return Index, measures the collateralized returns of the CMCI basket in each currency. Forward curves are equity like reflecting the sum of Excess Return slopes and Interest rate carry
TY	Total Yield
TW	Target Weights
TWAF	Tenor Weight Adjusting Factor, the factor used in the weighting each pair (Commodity Component, SCM) to their CTTW

VI	Volume Indicator. The Volume Indicator (VI) is obtained by compiling total annual consumption data (in volume/quantity terms) for the most recent calendar year. World consumption data were used in all cases, aside from the Agriculture sector, where US consumption data were used.
XDCMFP	A notation for the currency Converted value of the Daily Constant Maturity Forward Price
XY	Convexity yield
LRP	Liquidity Reference Period, is the period of time over which the various metrics are calculated, and is defined as the period of six months preceding the Calculation Reference Date(CRD)
LTW	Liquidity Tenor Weights, for a given component, the weight obtained from the liquidity function defined in Section 3.0. and reflecting the relative liquidity of eligible CMCI Benchmark Standard Constant Maturities or Tenors along the respective forward curves

1.4.2. Index Weighting Calculation Terms

Allocation Methodology	The method chosen in the weighting process for the purpose of aggregating Open Interest and Market Volume data to designated eligible SCM. The method chosen for this purpose is Linear Allocation
ACMVV	Average Component Market Volume Value, is the weighted average of the last four calculated CMLV at the time of calculation (please see Section 3. for details)
ACOIV	Average Component Open Interest Value, the weighted average of the last four calculated COIV at the time of calculation (please see Section 3. for details)
ATMVV	Average Tenor Market Volume Value, the weighted average of the last four calculated TMVV at the time of calculation (please see Section 3. for details)
ATOIV	Average Tenor Open Interest Value, the weighted average of the last four calculated TOIV at the time of calculation (please see Section 3. for details)
CCLV	Combined Component Liquidity Weight
CMVV	Component Market Volume Value, is the U.S. Dollar converted value of the average of the DTVQ over the specified Liquidity Reference Period (LRP)
COIV	Component Open Interest Value reflects the U.S. Dollar value of the open interest on a given commodity trading instrument or component over the relevant period of time and is defined as the U.S. Dollar value of the average of the daily reference contract open interest value over a specified Liquidity Reference Period (LRP)
CTMVW	Component Tenor Market Volume Weight, is the weight associated to a component c and given Standard Constant Maturity purely derived from Market Volume data
CTOIW	Component Tenor Open Interest Weight, is the weight associated to a component c and given Standard Constant Maturity purely derived from Open interest data
EW	Economic Weight (please see Section 3.3. for details)
LME Allocation Methodology	The method chosen in the weighting process for LME data, for the purpose of aggregating Open Interest data to designated prompt dates. The method chosen for this purpose is Simple Allocation (see Section 3.1.2.2 and 3.1.3.1. for further reference)
LRP	Liquidity Reference Period, is the period of time over which the various metrics are calculated, and is defined as the period of six months preceding the Calculation Reference Date (CRD)
MV	Market Value is obtained by multiplying, (1) the Volume Indicator (VI) for the calculation period of a full year of consumption and/or production for each commodity, by (2) the Price Indicator (PI5) defined for this purpose

MVRP	Market Value Reference Period is the period of time over which Market Value is determined for purposes of the various calculations and is defined as the period of one year preceding the Calculation Reference Date (CRD)
MVW	Market Value Weight (please see Section 3.3. for details)
PI_5	Price Indicator is defined as the average of the prices over the most recent five calendar year periods measured using the first four nearby (resp. maturity pillars) delivery months of each futures strip (resp. the forward curve) during the last three CMCI Business Days of each month during each of the five years in the period, converted by the daily currency exchange rate between the component's currency and the U.S. Dollar
TTW	Temporary Target Weights.
SCLW	Sector Component Liquidity Weights
SMVW	Sector Market Volume Weight
SOIW	Sector Open Interest Weight (please see Section 3.3. for details)
STW	Sector Target Weight
T_1, T_2	Time boundaries used for the purpose or allocating Open Interest and Market Volume data to the respective Standard Constant Maturities with aim to measure real liquidity along the various commodity forward curves
TEW	Tradable Economic Weight
TMVV	Tenor Market Volume Value (TMVV) reflects the U.S. Dollar value of the Market Volume on a given commodity trading instrument or component over the relevant period of time and is defined as the U.S. Dollar value of the average of the daily reference contract Market Volume value over a specified Liquidity Reference Period (LRP) and for a specific Standard Constant Maturity (SCM)
TMVW	Tradable Market Value Weight are obtained by combining liquidity, open interest and market value calculations with Market Value Weight calculations by using one third Market Value Weight and two third Combined Component Liquidity Weight
TOIV	Tenor Open Interest Value (TOIV) reflects the U.S. Dollar value of the open interest on a given commodity trading instrument or component over the relevant period of time and is defined as the U.S. Dollar value of the average of the daily reference contract open interest value over a specified Liquidity Reference Period (LRP) and for a specific Standard Constant Maturity (SCM)
TW	TW Target Weight, the Percentage Index weight fixed for each component represented in the Methodology as determined by the CMCI Weighing engine

1.4.3. Other abbreviations

Major Commodity Futures Exchanges

AFET	Agricultural Futures Exchange of Thailand For more information, please visit: http://www.afet.or.th/thai/
BCE	Budapest Commodity Exchange For more information, please visit http://www.bce-bat.com
BM&F	Bolsa de Mercadorias & Futuros For more information, please visit http://www.bmf.com.br
BrCE	Bremen Cotton Exchange For more information, please visit http://www.baumwollboerse.de
BRdM	Bursa Romana de Marfuri For more information, please visit http://www.brm.ro/root/

CBOT	Chicago Board of Trade For more information, please visit www.cbot.com
CCO	Central Japan Commodity Exchange For more information, please visit http://www.c-com.or.jp
CME	Chicago Mercantile Exchange For more information, please visit www.cme.com
COMEX	See NYMEX
DCE	Dalian Commodity Exchange For more information, please visit http://www.dce.com.cn
EEX	European Energy Exchange For more information, please visit www.eex.com
ECX	European Climate Exchange For more information, please visit http://www.europeanclimateexchange.com
EURONEXT (EN)	Euronext.Liffe For more information, please visit www.euronext.com
ICE Futures (formerly IPE)	InterContinental Exchange For more information, please visit www.theice.com
ICE Futures U.S.	Previously New York Board Of Trade (prior to September 2007), For more information, please visit www.theice.com
JADE	Joint Asian Derivatives Exchange (a joint venture between CBOT & SGX). For more information, please visit http://www.jadeexchange.com
KCE	Kansai Commodity Exchange For more information, please visit http://www.kanex.or.jp
KCBOT	Kansas City Board of Trade For more information, please visit www.kcbot.com
KFE	Korea Futures Exchange For more information, please visit www.kofex.com
LME	London Metal Exchange For more information, please visit www.lme.com
LMP	LME Plastics For more information, please visit www.lme.com
MATba	Mercado a Termino Buenos Aires S.A. For more information, please visit http://www.matba.com.ar
WCE	Winnipeg Commodity Exchange For more information, please visit www.wce.ca
MCI	Multi Commodity Exchange of India For more information, please visit http://www.mcxindia.com/
MDE	Malaysia Derivative Exchange For more information, please visit http://www.mdex.com.my/
MGEX	Minneapolis Grain Exchange For more information, please visit http://www.mgex.com

NCDEX	India National Commodity and Derivatives Exchange For more information, please visit http://www.ncdex.com/
NMCE	India National Multi-Commodity Exchange For more information, please visit http://www.nmce.com/
NYMEX (inc. COMEX, Clearport and Softs)	New York Mercantile Exchange For more information, please visit www.nymex.com
OME	Osaka Mercantile Exchange For more information, please visit http://www.osamex.com
PNC	Pakistan National Commodity Exchange For more information, please visit http://www.ncel.com.pk/
PNX	Powernext For more information, please visit http://www.powernext.fr
RMX	Risk Management Exchange See WTB
ROFEX	Mercado a Termino de Rosario For more information, please visit http://www.rofex.com.ar/
RTS	Russian Trading System For more information, please visit http://www.rts.ru/?tid=541
SAFEX	South Africa Futures Exchange For more information, please visit http://www.safex.co.za/
SCE	Sofia commodity Exchange For more information, please visit http://www.sce-bg.com/
SFE	Sydney Futures Exchange For more information, please visit http://www.sfe.com.au/
SGE	Shanghai Gold Exchange For more information, please visit http://www.sge.sh
SHFE	Shanghai Futures Exchange For more information, please visit http://www.shfe.com.cn
SHME	Shanghai Metal Exchange For more information, please visit http://www.shme.com/exchange/shme/shme.htm
SICOM	Singapore Commodity Exchange For more information, please visit http://www.sicom.com.sg/
SGX	Singapore Exchange For more information, please visit http://www.ses.com.sg/
TDE	Turkish Derivatives Exchange For more information, please visit http://www.turkdex.org.tr
TGE	Tokyo Grain Exchange For more information, please visit http://www.tge.or.jp

TOCOM	Tokyo Commodity Exchange For more information, please visit http://www.tocom.or.jp/
WTB (also called RMX)	Hanover Commodity Exchange For more information, please visit http://www.wtb-hannover.de/
ZCE	Zhengzhou Commodity Exchange For more information, please visit http://english.czce.com.cn/

2. Limitations of UBS Bloomberg CMCI Index Family

This Technical Document is not, nor does it purport to be, investment advice. The Index Administrator is not acting as an investment adviser or providing advice of any nature and does not assume any fiduciary obligation to any Product Investors. You should carefully consider whether the Products are suited to your particular circumstances and, if you are in any doubt, seek in dependent financial advice.

Though the Indices are designed to be representative of the markets they measure or otherwise align with their stated objective, they may not be representative in every case or achieve their stated objective in all instances. They are designed and calculated strictly to follow the rules of this Methodology, and any Index Level or other output is limited in its usefulness to such design and calculation.

Markets can be volatile, including those market interests which the Indices intend to measure or upon which the Indices are dependent in order to achieve their stated objective. For example, illiquidity can have an impact on the quality or amount of data available to the Index Administrator for calculation and may cause the Indices to produce unpredictable or unanticipated results.

In addition, market trends and changes to market structure may render the objective of the Index unachievable or to become impractical to replicate by investors.

Limitations and Risk factors in relation to a direct notional investment in the CMCI are set out below.

This Technical Document does not describe all of the risks associated with a direct notional investment in the CMCI. It describes only those risks that the Index Administrator considers to be material. There may be additional risks that the Index Administrator currently considers not to be material or of which it is not currently aware. Prospective Product Investors should seek independent financial advice where they do not fully understand the risks related to the Index Administrator, the components of the CMCI or the CMCI itself. In addition, each of the risks highlighted below could adversely affect the market value of the Product or the rights of Product Investors and, as a result, Product Investors could lose some or all of their investment. Risk factors in relation to a Product may be set out in the relevant documents in relation to such Product.

Products may not be a suitable investment for all investors

Each prospective Product Investor must determine the suitability of that investment in light of its own circumstances. In particular, each prospective Product Investor should: (a) have sufficient knowledge and experience to evaluate the Products, the merits and risks of investing in the Products and the information contained or incorporated by reference in the product documentation; (b) have access to, and knowledge of, appropriate analytical tools to evaluate, in the context of its particular financial situation, an investment in the relevant Product and the impact the Products will have on its overall investment portfolio; (c) have sufficient financial resources and liquidity to bear all of the risks of an investment in the Products, including where the settlement currency is different from the prospective Product Investor's currency or may be payable in one or more currencies; (d) understand thoroughly the terms of the Products and be familiar with any relevant assets, indices and financial markets; and (e) be able to evaluate (either alone or with the help of a financial adviser) possible scenarios for economic, interest rate and other factors that may affect its investment and its ability to bear the applicable risks.

Factors impacting the price of commodities generally will affect the level of the CMCI

The CMCI is composed of futures contracts on one or more physical commodities. Trading in commodities generally and trading in the commodity futures contracts referenced by the CMCI associated with such commodities is speculative and can be extremely volatile. Market prices of the physical commodities represented in the CMCI and the commodity futures contracts referenced by the CMCI may fluctuate rapidly based on numerous factors, including:

- changes in supply and demand relationships;

- weather;
- agriculture;
- trade;
- fiscal, monetary and exchange control programs;
- domestic and foreign political, military and economic events and policies;
- disease;
- technological developments;
- changes in currency exchange rates;
- changes in interest rates; and
- General market conditions.

These factors may affect the level of the CMCI in varying ways, and different factors may cause the value of the commodity futures contracts referenced by the CMCI and the component commodities, and the volatilities of their prices, to move in inconsistent directions at inconsistent rates. For example, because certain of the commodities underlying the commodity futures contracts referenced by the CMCI may be produced in a limited number of countries and may be controlled by a small number of producers, political, economic and supply related events in such countries could have a disproportionate impact on the level of the CMCI.

These factors interrelate in complex ways, and the effect of one factor on the level of the CMCI may offset or enhance the effect of another factor.

If the price of the component commodity increases, the level of the CMCI will not necessarily also increase.

If the price of the component commodity increases, the level of the CMCI will not necessarily also increase, for two reasons. The level of the CMCI tracks the performance of commodity futures contracts referenced by the CMCI, rather than the component commodity itself. Changes in the prices of the commodity futures contracts referenced by the CMCI should generally track changes in the price of the component commodity, but the price of the commodity futures contracts referenced by the CMCI might from time to time move in ways or to an extent that differ from movements in the price of the component commodity generally. Therefore, the prices of the component commodity may go up but the level of the CMCI may not change in the same way. Second, because the commodity futures contracts referenced by the CMCI has an expiration date — i.e., the date upon which trading of the commodity futures contracts referenced by the CMCI ceases, there are certain adjustments that need to be made to the level of the CMCI in order to retain an investment position in the commodity futures contracts referenced by the CMCI. These adjustments primarily include the mechanic of "rolling" – which is further described below – and may have a positive or negative effect on the level of the CMCI. As a result, these adjustments may, in certain instances, cause a discrepancy between the level of the CMCI and the performance of the commodity futures contracts referenced by the CMCI.

Futures prices of the component commodity that are different relative to their current prices may affect the level of the CMCI.

Unlike equities, which typically entitle the holder to a continuing stake in a corporation, commodity futures contracts normally specify a certain date for delivery of the underlying physical commodity. Holding a commodity futures contract to expiration will result in the delivery of the component commodity and net cash settlement. To maintain an investment position in the commodity futures contracts referenced by the CMCI without a delivery of the underlying physical commodity and net cash settlement, when the relevant commodity futures contract referenced by the CMCI approaches expiration, it is replaced by a similar contract that has a later expiration. Thus, for example, a component futures contract purchased and held in August may specify an October expiration. As time passes, the contract expiring in October may be replaced by a contract for delivery in December. This process is referred to as "rolling".

If the market for the component futures contract is in "backwardation", which means that the prices are lower in more distant delivery months than in nearer delivery months, the purchase of the December contract would take place at a price that is lower than the sale price of the October contract. Conversely, if the market for the

component futures contract is in "contango", which means that the prices are higher in more distant delivery months than in nearer delivery months, the purchase of the December contract would take place at a price that is higher than the sale price of the October contract. The difference between the prices of the two component futures contracts when they are rolled is sometimes referred to as a "roll yield," and the change in price that the component futures contract experiences while it is a component of the CMCI is sometimes referred to as a "spot return." An investor in a Product (or the CMCI itself were it directly investable) cannot receive either the roll yield or the spot return separately.

The shape of the commodity futures price (forward) curves reflect, among other things, the market conditions that are referred to as contango and backwardation. Commodity futures forward curves (a graph of the price of the futures contracts for a given commodity, with the x-axis being the maturity date) are determined by a variety of economic factors such as storage, insurance, and financing costs, and market activity by market participants such as producers, consumers, speculators and investors. It is not possible to predict the shape or level of the commodity futures forward curves of the component commodity.

Some commodity markets may be in contango, backwardation, or both contango and backwardation at the same time, but at different points on the forward curve. Other commodity markets may be in contango, backwardation, or both at the same time at other different points on the forward curve. Therefore, depending on the specific long and short positions in the component futures contract, the presence of contango, backwardation, or both contango and backwardation in commodity markets related to the components of the CMCI could result in net positive roll yields or net negative roll yields.

The presence of net negative roll yields could adversely affect the level of the CMCI and the value of any Products even where the spot or near term price performance of the component commodity is stable or move in a direction that is favorable for the performance of the CMCI. Therefore, the performance of the CMCI could be adversely affected by the shape and level (and change in the shape and level) of the commodity futures forward curve.

As it is not possible to predict whether any one or more commodity markets related to the components of the CMCI will be (or will remain) in contango, backwardation, or both contango and backwardation at the same time, it is not possible to predict the effect of contango or backwardation on the level of the CMCI.

Changes in the composition and calculation of the CMCI will affect the level of the CMCI

The Index Administrator may amend the composition of and rules for calculating the CMCI, including additions, deletions and the weightings of the component commodities, all of which could affect the level of the CMCI. When considering changes to the CMCI, the Index Administrator does not have any obligation to take the needs of any parties to Products into consideration when re-weighting or making any other changes to the CMCI.

The bi-annual composition of the CMCI is calculated in reliance upon historic price, liquidity and production data that are subject to potential errors in data sources or errors that may affect the weighting of components of the CMCI. Any revisions to correct discrepancies are not applied retroactively but will be reflected in prospective weighting calculations of the CMCI for the following year. However, there can be no guarantee that every discrepancy will be discovered.

Limited performance history

The CMCI index family was launched in January 2007. Certain CMCI indices are intended to represent a benchmark for commodities investments; however, the methodology used to achieve this benchmarking has a limited history of application. It cannot therefore be determined at this point whether, or the extent to which, any CMCI index will serve as an adequate benchmark for the performance of the relevant commodities market or markets. Moreover, while the CMCI is subject to bi-annual review and rebalancing in order to maintain the intended commodity weightings, it is uncertain how successful the Index Administrator will be in achieving its goal of maintaining an appropriate benchmark.

The historical or hypothetical performance of the CMCI or any component of the CMCI is not an indication of

future performance

The historical or hypothetical performance of the CMCI or any component of the CMCI should not be taken as an indication of the future performance of the CMCI or any component of the CMCI. It is impossible to predict whether the future level, value or price of the CMCI or any component of the CMCI will fall or rise. Past fluctuations and trends in the CMCI or any component of the CMCI are not necessarily indicative of fluctuations or trends that may occur in the future.

Suspension or disruptions of market trading in commodity futures contracts referenced by the CMCI and related futures markets may adversely affect the level of the CMCI

The commodity markets are subject to temporary distortions or other disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators and government regulation and intervention. In addition, some futures exchanges have regulations that limit the amount of fluctuation in futures contract prices that may occur during a single business day. These limits are generally referred to as "daily price fluctuation limits" and the maximum or minimum price of a contract on any given day as a result of these limits is referred to as a "limit price". Once the limit price has been reached in a particular contract, no trades may be made at a different price. Limit prices have the effect of precluding trading in a particular contract or forcing the liquidation of contracts at disadvantageous times or prices. These circumstances could adversely affect the level of the CMCI.

The LME's use of or omission to use price controls

Certain of the commodity futures contracts referenced by the CMCI are traded on the London Metal Exchange ("**LME**"). The LME has no daily price fluctuation limits to restrict the extent of daily fluctuations in the prices of contracts traded on it, including the commodity futures contracts referenced by the CMCI. In a declining market, therefore, it is possible that prices for one or more contracts, including any commodity futures contract referenced by the CMCI, that are traded on the LME, would continue to decline without limitation within short period of time. A steep decline in the price of a commodity futures contracts referenced by the CMCI could have a significant adverse impact on the level of the CMCI.

Moreover, the LME has discretion to impose "backwardation limits" by permitting short sellers who are unable to effect delivery of an underlying commodity and/or borrow such commodity at a price per day that is no greater than the backwardation limit to defer their delivery obligations by paying a penalty in the amount of the backwardation limit to buyers for whom delivery was deferred. Backwardation limits tend to either constrain appreciation or cause depreciation of the prices of futures contracts expiring in near delivery months. For example, in response to a drop in nickel stocks to historically low levels in August 2006, the LME imposed a backwardation limit on nickel of $300 per tonne per day, which limit was subsequently lifted on November 11, 2006. Similar impositions of backwardation limits in the future could adversely affect the level of any CMCI index which includes commodity futures contracts referenced by the CMCI tracked on the LME.

Concentration of particular commodity futures contracts in the CMCI

The CMCI may be comprised fully or to a significant extent of commodity futures contracts representing either a particular commodity sector (such as agriculture) or commodity. The CMCI may therefore have an increased exposure to fluctuations in the commodity sectors or commodities underlying the CMCI.

Changes in the notional rate of interest may affect the value of a Total Return Index

The level of each Total Return Index within the CMCI family is linked, in part, to a fixed income return in the relevant currency. Assuming the trading prices of the commodity futures contracts referenced by the CMCI remain constant, a decrease in the relevant rate of interest will adversely impact the level of such Total Return Index.

Influence of Currency Exchange Rates

Components of the CMCI may be denominated in currencies different from the currency in which the CMCI is

denominated, and the CMCI, other than the Currency Hedged indices, is not currency-hedged. An unfavorable performance of such currencies in relation to the currency in which the CMCI is denominated may have an adverse effect on the level of the CMCI at any given time.

Rules-based index

The CMCI operates on the basis of pre-determined rules. No assurance can be given that the methodology on which the CMCI is based will be successful or that the CMCI will outperform any alternative methodology that could have been employed.

The CMCI is not actively managed

The CMCI operates in accordance with a pre-determined methodology and formulae as further described herein, and the Index Administrator exercises discretion only in limited situations. The CMCI is, therefore, not actively managed. There will be no active management of the CMCI so as to enhance returns beyond those embedded in the CMCI. Market participants are often able to adjust their investments promptly in view of market, political, financial or other factors, and an actively managed product could potentially respond more directly and appropriately to immediate market, political, financial or other factors than a non-actively managed CMCI. In contrast, the pre-determined methodology and formulae in respect of the CMCI will rebalance the weights or quantity assigned to each component of the CMCI to its specified value only once per month, as the CMCI rebalances on a monthly basis.

The Index Administrator is not acting as an investment adviser or commodity trading adviser or performing a discretionary management role with respect to the CMCI and, as a result, has any fiduciary duty to any person in respect of the CMCI.

Product Investors could lose their entire investment

The level of the CMCI depends on the performance of the components of the CMCI, each of which may increase or decrease in value. Neither the CMCI nor any of the components of the CMCI includes any element of capital protection or guaranteed return. The value of any component of the CMCI, or the CMCI itself, may fall below its initial value.

No rights in any component of the CMCI

The CMCI is purely synthetic. The exposure to each component of the CMCI is purely notional and will exist only in the records held by the Index Administrator. A notional investment in the CMCI will not make a Product Investor the owner of, or as the case may be, a party to, any component of the CMCI comprising the CMCI. Product Investors will not have any rights with respect to any component of the CMCI.

The CMCI relies on the use of third-party information about components of the CMCI

All information in this Technical Document about any component of the CMCI has been derived from publicly available documents. The Index Administrator has not participated and will not participate in the preparation of any of those documents. Nor has the Index Administrator made or will the Index Administrator make any "due diligence" investigation or any inquiry with respect to the sponsor or issuer of any component of the CMCI in connection with the maintenance of the CMCI. The Index Administrator does not make any representation or warranty that any such publicly available document or any other relevant publicly available information is accurate or complete. Furthermore, the Index Administrator does not know whether all events occurring before the date of this Technical Document, including events that would affect the accuracy or completeness of the publicly available documents referred to above or the level, value or price of any component of the CMCI, have been publicly disclosed. Subsequent disclosure of any events of this kind or the disclosure of or failure to disclose material future events concerning any component of the CMCI could affect the level of the CMCI.

The policies of the Index Administrator and changes that affect the composition and the components of the

CMCI could affect the level of the CMCI

The policies of the Index Administrator concerning the calculation of the level of the CMCI and the values of the components of the CMCI could affect the level of the CMCI.

The Index Administrator may modify the methodology for calculating the level of the CMCI and the values of the components of the CMCI. In addition, as described herein, under a number of circumstances the Index Administrator may make certain changes to the way in which the level of the CMCI or the value of any of the components of the CMCI is calculated. The Index Administrator may also be required to discontinue or suspend calculation or publication of the CMCI, in which case it may become difficult to determine the level of the CMCI. Notice of such amendments shall be provided in advance on the Bloomberg Page and/or on the CMCI Website.

Trading and other transactions by the Index Owner and its affiliates in the CMCI or the components of the CMCI may affect the level of the CMCI

The Index Owner and its affiliates may also engage in trading in the CMCI, the components of the CMCI, futures or options on the components of the CMCI and other investments relating to or based on the CMCI or the components of the CMCI on a regular basis as part of its general business, for proprietary accounts, for other accounts under management, to facilitate transactions for customers or to hedge obligations under products linked to the CMCI or components of the CMCI. Although they are not intended to, any of these activities could adversely affect the value of the components of the CMCI or the level of the CMCI. It is possible that one or more of the Index Owner and its affiliates could receive substantial returns from these activities while the value of the components of the CMCI and the level of the CMCI decline.

The Index Owner or its affiliates may also issue or underwrite securities or financial or derivative instruments with returns linked or related to changes in the performance of any of the foregoing.

With respect to any of the activities described above, neither the Index Owner nor its affiliates has any obligation to take into consideration at any time the impact of such activities on the value of the components of the CMCI or the level of the CMCI.

Termination or Suspension of the CMCI

The Index Owner and Index Administrator are under no obligation to continue the calculation, publication and dissemination of the CMCI. The CMCI may be terminated or temporarily suspended at any time. Should the CMCI cease to exist, this may have a negative impact on the return on any notional investment in the CMCI.

Amendment or Modification to the Technical Document

This Technical Document may be amended, modified or adjusted from time to time by the Index Administrator. Any such amendment, modification or adjustment may have an adverse effect on the level of the CMCI. The Index Administrator will apply the method described in this Technical Document for the composition of the CMCI and calculation of the level of the CMCI. However it cannot be excluded that the market environment, supervisory, legal, and financial or tax reasons may require changes to be made to this method. The Index Administrator may also make changes to the provisions of this Technical Document and the method applied to calculate the level of the CMCI, which it deems to be necessary.

Index Administrator Discretion

The CMCI confers discretion on the Index Administrator in making certain determinations, calculations and corrections from time to time. Although any such determinations, calculations and corrections must be made by the Index Administrator in good faith, the exercise of such discretion in the making of any calculations, determinations and corrections may adversely affect the performance of the CMCI. Any such determination, calculation or correction by the Index Administrator will be, in the absence of manifest error, final, conclusive and binding. The Index Administrator will determine whether any such correction shall apply retrospectively or from

the relevant date forward.

The role played by UBS, as Index Owner, could present it with significant conflicts of interest in light of the fact that UBS is the issuer or counterparty of Products. Neither the Index Owner nor the Index Administrator has any obligation to take into consideration the needs of any Product Investor at any time.

Change of Index Administrator

The Index Owner may without the consent of Product Investors designate a successor Index Administrator (the "**Successor Index Administrator**") at its discretion – in the event of such replacement, any reference to the "Index Administrator" shall be construed as a reference to the Successor Index Administrator.

The CMCI may in the future include contracts that are not traded on regulated futures exchanges.

As of 17 July 2014, the CMCI is composed of component commodity contracts traded on regulated U.S. futures exchanges (such exchanges referred to in the United States as "designated contract markets") and regulated U.K. futures exchanges. As described below, however, the CMCI may in the future include contracts traded on trading facilities that are subject to lesser degrees of regulation or, in some cases, no substantive regulation. As a result, trading in such contracts, and the manner in which prices and volumes are reported by the relevant trading facilities, may not be subject to the provisions of, and the protections afforded by, the U.S. Commodity Exchange Act, as amended or other applicable statutes and related regulations that govern trading on regulated U.S. futures exchanges, or similar statutes and regulations that govern trading on regulated U.K. futures exchanges. In addition, many electronic trading facilities have only recently initiated trading and do not have significant trading histories. As a result, the trading of such contracts on such facilities, and the inclusion of such contracts in the CMCI may be subject to certain risks not presented by U.S. or U.K. contracts that are traded on an exchange, including risks related to the liquidity and price histories of the relevant OTC contracts.

3. The CMCI Calculation Methodology

Commodity and financial markets change over time, and new commodities may become relevant to the CMCI as they enter the realm of exchange traded futures contracts with transparency and liquidity. It may be necessary to amend the list of CMCI eligible components to include such commodities, so that the CMCI can evolve with the developments in commodity markets and continue to meet its mandate as a global commodity benchmark index that is diversified across a range of commodities and is international in its scope. Such changes could be implemented by the Index Administrator whenever a Market Emergency or Force Majeure Event has been identified or declared or upon any Index rebalancing.

3.1. Definition of Constant Maturity Forwards for the CMCI

The CMCI is calculated on the basis of specified tenors or maturities that remain constant. For example, the three month constant maturity forward is at all times based on a combination of contracts with the middle of their delivery periods approximately three months from the date of calculation.

We provide a mathematical definition of the constant maturity forward on a commodity curve in the context of the CMCI.

Using Eligible Nearby Contracts (ENC), defined below as the most liquid contract expirations for each Standard Constant Maturity (SCM), we provide:

- a definition of Daily Constant Maturity Date (DCMD),
- a definition of the Middle Delivery Period (MDP), and
- the calculation of the Daily Constant Maturity Forward Price (DCMFP), as a function of the two above notions.

The eligible SCM for each Commodity Component as of 1 January 2010, as may be updated by the Index Administrator from time to time pursuant to this Technical Document, are specified in Table II.A. below.

TABLE A.I. CMCI BENCHMARK INDEX AVAILABLE STANDARD CONSTANT MATURITIES

Component/Available SCM	Code	3M	6M	1Y	2Y	3Y
WTI Crude Oil 1	CL	Yes	Yes	Yes	Yes	Yes
Brent Crude Oil	CO	Yes	Yes	Yes	Yes	Yes
ULS Deisel	HO	Yes	Yes	Yes	-	-
Gasoil	QS	Yes	Yes	-	-	-
RBOB Gasoline	XB	Yes	Yes	-	-	-
Natural Gas	NG	Yes	Yes	Yes	-	-
LME Copper	LP	Yes	Yes	Yes	Yes	Yes
High Grade Copper	HG	Yes	Yes	-	-	-
LME Zinc	LX	Yes	Yes	Yes	-	-
LME Aluminium	LA	Yes	Yes	Yes	Yes	Yes
LME Nickel	LN	Yes	Yes	Yes	-	-
LME Lead	LL	Yes	Yes	Yes	-	-
Gold	GC	Yes	Yes	Yes	-	-
Silver	SI	Yes	Yes	Yes	-	-
SRW Wheat	W_(*)	Yes	Yes	Yes	-	-
HRW Wheat	KW	Yes	Yes	-	-	-
Milling Wheat	CA	Yes	Yes	-	-	-
Corn	C_(*)	Yes	Yes	Yes	-	-
Soybeans	S_(*)	Yes	Yes	Yes	-	-
Soybean Meal	SM	Yes	Yes	-	-	-
Soybean Oil	BO	Yes	Yes	-	-	-
Sugar #11	SB	Yes	Yes	Yes	-	-
Sugar #5	QW	Yes	Yes	-	-	-
Coffee "C" Arabica	KC	Yes	Yes	Yes	-	-
Cotton	CT	Yes	Yes	-	-	-
US Cocoa	CC	Yes	Yes	-	-	-
London Cocoa	QC	Yes	Yes	-	-	-
Live Cattle	LC	Yes	Yes	-	-	-
Lean Hogs	LH	Yes	Yes	-	-	-

Source: Bloomberg

(*): The underscore "_" denotes a space.

3.1.1.1. Standard Constant Maturity (SCM) and Constant Maturity Boundaries (CMB)

A Standard Constant Maturity is a Tenor for which the CMCI is calculated. Each Tenor being independent of each other, it allows the calculation of returns associated with specific segments of the forward curves, making the CMCI a family of commodity instruments calculated for designated maturities.

The CMCI, its sectors and its component indices are calculated for the following Standard Constant Maturities (SCM):

- Months (3M),
- 6 Months (6M),
- 1 Year (12M),
- Years (24M),
- Years (36M).

We also provide single component indices for the following Standard Constant Maturities for specific commodities only:

- 4 Years (48M),
- 5 Years (60M).

When, for a specific component, the Standard Constant Maturity extends to an illiquid region of the curve, as determined by the Index Administrator, in such a way that the CMCI cannot be calculated by means of simple price observation, a Constant Maturity boundary (CMB) replaces the SCM in the calculation and the particular SCM will have a tenor equal to the applicable CMB.

3.1.1.2. Determination of Daily Constant Maturity Dates (DCMD)

In order to calculate the CMCI with the appropriate SCM tenors, it is first necessary to identify the relevant forward date for which, on any given day and for each tenor, the Index Administrator will identify the applicable futures contracts and price. This date is referred to as the Daily Constant Maturity Date (DCMD) and is not necessarily a CMCI Business Day.

For example, on a given date on which the calculation is made, the appropriate forward date for the three month constant maturity is exactly 91 days from the date of calculation, which is equivalent to approximately three months.

Please refer to Appendix B.1. for detailed calculations of DCMD.

3.1.1.3. Middle of Delivery Periods (MDP)

With respect to commodities futures contracts, the contract month name (i.e. JUN10 or M10) usually indicates the month in which the delivery period associated with that contract occurs. However, the exact time period in that month during which the commodity is to be delivered can vary significantly across contracts as each physical commodity market carries its own unique characteristics, delivery cycles and conventions[2].

To address this issue, the Index Administrator designates a theoretical date within the delivery period, referred to as the Middle of Delivery Period (MDP). The date is sought to represent the mid-point between the first and last day of the delivery period for the relevant contract as defined by the rules of the applicable exchange. As delivery periods are well defined and enforced by exchanges on which futures contracts trade, the date is a direct function of the effective delivery period attached to each Futures contract. The MDP for each contract is then used to determine the Contract Proportions, discussed below, that are used to calculate the portion of the CMCI attributable to a given maturity along the curve for a given SCM.

The MDP for each commodity futures contract is defined in table II.C.1 below. The MDPs are determined by the Index Administrator, which also reviews and approves all changes in methodology affecting such determination.

[2] For example, on the NYMEX WTI Light sweet crude oil, the JUN07 contract expires the 23rd of May, and delivery can take place at any time from the first to the last calendar day of the month, but for other commodities, it is not unusual to see delivery periods extend beyond that period, or even overlap with a few of the last trading days of the contract

3.1.1.4. The calculation of Daily Constant Maturity Forward Prices (DCMFP)

As with most asset classes, liquidity reduces as time to maturity increases. Therefore, with respect to commodity markets, exchanges limit the tenor of Futures expiries to prevent unnecessary dilution of liquidity.

When such long dated contracts are listed, market participants usually concentrate on the most liquid ones gradually taking positions on all segments of the forward curves. The CMCI methodology aims to reflect this practice while maintaining the objective of transparency and avoiding potential price manipulation to which less traded contracts are prone.

Eligible Nearby Contracts (ENC) are therefore defined, for each Standard Constant Maturity (SCM), as economically significant and liquid futures contract and are set forth in Tables II.A.1. and Table II.A.2. below.

In 2013, the eligible nearby contracts for the Wheat 1y Standard Constant Maturity expanded to include March, May and September in addition to the existing eligible nearby contracts July and December for liquidity reasons. The change was in effect as of 1st August 2013.

TABLE II.A.1. DEFINITION OF CMCI ELIGIBLE NEARBY CONTRACTS (ENC)

Contract/ SCM (or CMB)	BBG Code	3M	6M	1Y	2Y	3Y	4Y	5Y
WTI Crude Oil 1	CL	F,G,H,..Z	F,G,H,..Z	F,G,H,..Z	M,Z	Z	Z	Z
WTI Crude Oil 2	EN	F,G,H,..Z	F,G,H,..Z	F,G,H,..Z	M,Z	Z	Z	Z
Brent Crude Oil	CO	F,G,H,..Z	F,G,H,..Z	F,G,H,..Z	M,Z	Z	Z	Z
ULS Diesel	HO	F,G,H,..Z	F,G,H,..Z	F,G,H,..Z	-	-	-	-
Low Sulfur Gasoil	QS	F,G,H,..Z	F,G,H,..Z	-	-	-	-	-
RBOB Gasoline	XB	F,G,H,..Z	F,G,H,..Z	-	-	-	-	-
Natural Gas	NG	F,G,H,..Z	F,G,H,..Z	F,G,H,..Z	Z	Z	-	-
LME Copper	LP	F,G,H,..Z	F,G,H,..Z	F,G,H,..Z	M,Z	M,Z	M,Z	-
High Grade Copper	HG	H, K, N, U, Z	H, K, N, U, Z	-	-	-	-	-
LME Zinc	LX	F,G,H,..Z	F,G,H,..Z	F,G,H,..Z	-	-	-	-
LME Aluminium	LA	F,G,H,..Z	F,G,H,..Z	F,G,H,..Z	M,Z	M,Z	M,Z	-
LME Nickel	LN	F,G,H,..Z	F,G,H,..Z	M,Z	-	-	-	-
LME Lead	LL	F,G,H,..Z	F,G,H,..Z	F,G,H,..Z	-	-	-	-
Gold	GC	G,J,M,Q,Z	G,J,M,Q,Z	M,Z	Z	Z**	-	-
Silver	SI	H,K,N,U,Z	H,K,N,U,Z	N,Z	Z	Z**	-	-
SRW Wheat	W	H,K,N,U,Z	H,K,N,U,Z	H,K,N,U,Z	-	-	-	-
Milling Wheat	CA	H,K,U,Z*	H,K,U,Z*	-	-	-	-	-
HRW Wheat	KW	H,K,N,U,Z	H,K,N,U,Z	N,Z	-	-	-	-
Corn	C	H,K,N,U,Z	H,K,N,U,Z	H,K,N,U,Z	-	-	-	-
Soybeans	S	F,H,K,N,X	F,H,K,N,X	H,N,X	-	-	-	-
Soybean Meal	SM	F,H,K,N,Q,U,Z	F,K,N,Z	-	-	-	-	-
Soybean Oil	BO	F,H,K,N,Q,U,Z	F,K,N,Z	-	-	-	-	-
Sugar No.11	SB	H,K,N,V	H,K,N,V	H,K,N,V	-	-	-	-
Sugar #5	QW	H,K,Q,V,Z	H,K,Q,V,Z	-	-	-	-	-
Coffee "C"	KC	H,K,N,U,Z	H,K,N,U,Z	H,K,N,U,Z	-	-	-	-
Cotton No.2	CT	H,K,N,Z	H,K,N,Z	-	-	-	-	-
Live Cattle	LC	G,J,M,Q,V,Z	G,J,M,Q,V,Z	-	-	-	-	-
Lean Hogs	LH	G,J,M,Q,V,Z	G,J,M,Q,V,Z	-	-	-	-	-
Cocoa Q	CC	H,K,N,U,Z	H,K,N,U,Z	-	-	-	-	-
London Cocoa C	QC	H,K,N,U,Z	H,K,N,U,Z	-	-	-	-	-

* Effective July 15, 2013, Delivery cycle changed to March, May, September and December such that 12 months are available for listing. As of the November 10, 2014 CMCI Milling Wheat Tenors began rolling into the new delivery cycle contracts.

** *Note that 3Y Gold and Silver are not included in the CMCI Benchmark Index as of 28-Jul-2015*, and the 2Y Gold and Silver are not included in the CMCI Benchmark Index as of 27-Jul-2016

Source: UBS, Bloomberg.

TABLE II.A.2 DEFINITIONOF ELIGIBLE NEARBY CONTRACTS (ENC) FOR NON-CMCI INDICES

Contract/ SCM (or CMB)	BBG Code	3M	6M	1Y	2Y	3Y	4Y	5Y
Canola	RS	F,H,K,N,X	-	-	-	-	-	-
Barley	WA	H,K,N,V,Z	-	-	-	-	-	-
Lumber (Random Lgth.)	LB	F,H,K,N,U,X	-	-	-	-	-	-
Rough Rice	RR	F,H,K,N,U,X	-	-	-	-	-	-
Rapeseed (Colza)	IJ	G,K,Q,X	-	-	-	-	-	-
Platinum*	PL	F,J,N,V	-	-	-	-	-	-
F.C. Orange Juice (A)	JO	F,H,K,N,U,X	-	-	-	-	-	-
Feeder Cattle	FC	F,H,J,K,Q,U,V,X	-	-	-	-	-	-

* As of H1-2013 the eligible contracts and rolling period for the Platinum 3M Index were adjusted for liquidity and open interest. The roll period was shortened from six months to four months. As a result, the contract roll is completed over the course of the first calendar month of the rolling period; during the following two months, the exposure remains unchanged. During the final month of the rolling period, the Platinum 3M Index rolls into the next eligible contract.

This change is equivalent to the introduction of the following months in the CMCI Platinum 3M rolling schedule: Liquidity Adjusted Contracts F,F,J,J,N,N,V,V; where each contract has two different MDPs. The first MDP corresponds to the non-adjusted CMCI MDP. The second MDP is equal to the first one + 2 calendar months.

Source: UBS, Bloomberg.
Legend: -: Standard Constant Maturity (SCM) for which the Component is not quoted.
F: Jan, G: Feb, H: Mar, J: Apr, K: May, M: Jun, N: Jul, Q: Aug, U: Sep, V: Oct, X: Nov, Z: Dec.

Constant Maturity Boundaries (CMB) are listed in Table II.B.1. and II.B.2. below (the sign "-" denotes that no boundary is applied to the component for an SCM).

TABLE II.B.1. DEFINITIONOF CMCI CONSTANT MATURITY BOUNDARIES

Contract/ SCM (or CMB)	BBG Code	3M	6M	1Y	2Y	3Y	4Y	5Y
WTI Crude Oil 1	CL	-	-	-	-	-	-	-
Brent Crude Oil	CO	-	-	-	-	-	-	-
ULS Diesel	HO	-	-	-	1Y	1Y	1Y	1Y
Low Sulfur Gasoil	QS	-		6M	6M	6M	6M	6M
RBOB Gasoline	XB	-	-	6M	6M	6M	6M	6M
Natural Gas	NG	-	-	-	1Y	1Y	1Y	1Y
LME Copper	LP	-	-	-	-	-	-	4Y
High Grade Copper	HG	-	-	6M	6M	6M	6M	6M
LME Zinc	LX	-	-	-	1Y	1Y	1Y	1Y
LME Aluminium	LA	-	-	-	-	-	-	4Y
LME Nickel	LN	-	-	-	1Y	1Y	1Y	1Y
LME Lead	LL	-	-	-	1Y	1Y	1Y	1Y
Gold*	GC	-	-	-	1Y	1Y	1Y	1Y
Silver*	SI	-	-	-	1Y	1Y	1Y	1Y
SRW Wheat	W	-	-	-	1Y	1Y	1Y	1Y
HRW Wheat	KW	-	-	-	1Y	1Y	1Y	1Y
Milling Wheat	CA	-	-	6M	6M	6M	6M	6M
Corn	C	-	-	-	1Y	1Y	1Y	1Y
Soybeans	S	-	-	-	1Y	1Y	1Y	1Y
Soybean Meal	SM	-	-	6M	6M	6M	6M	6M
Soybean Oil	BO	-	-	6M	6M	6M	6M	6M
Sugar No.11	SB	-	-	-	1Y	1Y	1Y	1Y
Sugar #5	QW	-	-	6M	6M	6M	6M	6M
Coffee "C"	KC	-	-	-	1Y	1Y	1Y	1Y
Cotton No.2	CT	-	-	6M	6M	6M	6M	6M
Live Cattle	LC	-	-	6M	6M	6M	6M	6M
Lean Hogs	LH	-	-	6M	6M	6M	6M	6M
Cocoa	*CC*	-	-	6M	6M	6M	6M	6M
LondonCocoa	QC	-	-	6M	6M	6M	6M	6M

**Note that 3Y Gold and Silver are not included in the CMCI Benchmark Index as of 28-Jul-2015,and the 2Y Gold and Silver are not included in the CMCI Benchmark Index as of 27-Jul-2016.*

Source: UBS, Bloomberg
Legend: -: No boundary; NQ: Not Quoted.

TABLE II.B.2. DEFINITION OF CONSTANT MATURITY BOUNDARIES FOR NON-CMCI INDICES

Contract	BBG Code	3M	6M	1Y	2Y	3Y	4Y	5Y
WTI Crude Oil 2	EN	-	-	-	-	-	-	-
Barley	WA	-	3M	3M	3M	3M	3M	3M
Lumber (Random Length)	LB	-	3M	3M	3M	3M	3M	3M
Rough Rice	RR	-	3M	3M	3M	3M	3M	3M
Rapeseed (Colza)	IJ	-	3M	3M	3M	3M	3M	3M
Platinum	PL	-	3M	3M	3M	3M	3M	3M
F.C. Orange Juice (A)	JO	-	3M	3M	3M	3M	3M	3M
Feeder Cattle	FC	-	3M	3M	3M	3M	3M	3M

Source: UBS, Bloomberg
Legend: -: No boundary; NQ: Not Quoted.

Middle of Delivery Periods (MDPs) are listed in Tables II.C.1. and II.C.2. below.

TABLE II.C.1. DEFINITION OF CMCI NON ADJUSTED MIDDLE OF DELIVERY PERIODS (NAMDP)

Contract	Exch.	BBG Code	Delivery Period or Cash settlement date
WTI Crude Oil 1	NYMEX	CL	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
WTI Crude Oil2	ICE	EN	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Brent Crude Oil	ICE	CO	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
ULS Diesel	NYM	HO	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Low Sulfur Gasoil	EX	QS	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
RBOB Gasoline	ICE	XB	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Natural Gas LME	NYM	NG	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Copper	EX	LP	2 trading days prior to last trade date
High Grade Copper	NYM	HG	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
LME Zinc	EX	LX	2 trading days prior to last trade date
LME Aluminum	LME	LA	2 trading days prior to last trade date
LME Nickel LME	COM	LN	2 trading days prior to last trade date
Lead	EX	LL	2 trading days prior to last trade date
Gold	LME	GC	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Silver	LME	SI	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
SRW Wheat	LME	W	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
HRW Wheat	LME	KW	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Milling Wheat	COM	CA	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Corn	CBOT	C	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Soybeans	CBOT	S	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Soybean Meal	CBOT	SM	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Soybean Oil	CBOT	BO	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Sugar No.11	NYBOT	SB	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Sugar #5	EN	QW	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Coffee "C"	NYBOT	KC	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Cotton No.2	INYBOT	CT	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Live Cattle	CME	LC	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Lean Hogs	CME	LH	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
US Cocoa	I	CC	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
London Cocoa	C E	QC	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date

Source: UBS, Bloomberg

TABLE II.C.2. DEFINITION OF NON ADJUSTED MIDDLE OF DELIVERY PERIODS (NAMDP) FOR NON-CMCI INDICES

Contract	Exch.	BBG Code	Delivery Period or Cash settlement date
Canola	WCE	**RS**	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date
Barley	WCE	**WA**	
Lumber (Rand. Lgth.)	CME	**LB**	
Rough Rice	CME	**RR**	
Rapeseed (Colza)	EN	**IJ**	
Platinum	NYMEX	**PL**	
Feeder Cattle	CME	**FC**	
F.C. Orange Juice (A)	NYBOT	**JO**	Earlier of 1 trading day prior to last trade date or 2 trading days prior to first notice date

Source: UBS, Bloomberg

3.1.1.5. Adjustments to the MDP for the calculation of the CMCI-3M

In the case where a component instrument is composed of four Eligible Nearby Contacts (ENC) per calendar year, the calculation of the CMCI-3M can be problematic if two consecutive contract are spaced by more than three months. In such case, the number of days between the DCMD and the reference calculation date is less than the difference in days between the two consecutive MDPs used in the calculation of the DCMFP. We resolve this technical issue by adjusting the MDP backwards to prevent:

- an expired contract to continue to be referenced by the CMCI calculation engine,
- the CMCI referencing contracts in their Notice Period.

The only SCM for which an adjustment to the MDP is necessary is the 3M.

In 2013, the Soybeans November designated Middle of Delivery Period (MDP) was adjusted by one month. This change was necessary to avoid July Soybeans exposure in the July Notice period. As a result, the CMCI will roll July Soybeans exposure to November one month earlier. The change took effect during the July Soybeans roll in 2014.

TABLE II.D.1.1. ADJUSTMENT OF MDP FOR FIRST NOTICE DAYS AND EXPIRIES, FOR THE CMCI 3M

Contract	BBG Code	MDPa
WTI Crude Oil 1	CL	- , - , - ,.. -
WTI Crude Oil 2	EN	- , - , - ,.. -
Brent Crude Oil	CO	- , - , - ,.. -
ULS Diesel	HO	- , - , - ,.. -
Low Sulfur Gasoil	QS	- , - , - ,.. -
RBOB Gasoline	XB	- , - , - ,.. -
Natural Gas	NG	- , - , - ,.. -
LME Copper	LP	- , - , - ,.. -
High Grade Copper	HG	- , - , - ,.. -
LME Zinc	LX	- , - , - ,.. -
LME Aluminium	LA	- , - , - ,.. -
LME Nickel	LN	- , - , - ,.. -
LME Lead	LL	- , - , - ,.. -
Gold	GC	- , - , - , - , -1m
Silver	SI	- , - , - , - , -
SRW Wheat	W	- , - , - , - , -
HRW Wheat	HRW	- , - , - , - , -
Milling Wheat	CA	-2m , -1m , - , -3m ,
Corn	C	- , - , - , - , -
Soybeans	S	- , - , - , - ,-2m
Soybean Meal	SM	- , - , - , - , - , - , -
Soybean Oil	BO	- , - , - , - , - , - , -
Sugar No.11	SB	-3m, -2m, -1m, -1m
Sugar #5	QW	-2m,-2m,-2m,-2m,-2m
Coffee "C"	KC	-1m, - , - , - ,-1m
Cotton No.2	CT	-1m, -1m, -, -2m
Live Cattle	LC	- , - , - , - , - , -
Lean Hogs	LH	- , - , - , - , - , -
Cocoa	CC	- , - , - , - , - , -
London Cocoa	QC	-1m, - , - , - , -

Legend: - : No adjustment
Source: UBS, Bloomberg

TABLE II.D.1.2. ADJUSTMENT OF MDP FOR FIRST NOTICE DAYS AND EXPIRIES, FOR TH E NON-CMCI 3M

Contract	BBG Code	MDPa
Canola	RS	-1m,-1m,-1m,..-1m
Barley	WA	-1m,-1m,-1m,..-1m
Lumber (Rand. Lgth.)	LB	-1m,-1m,-1m,..-1m
Rough Rice	RR	-1m,-1m,-1m,..-1m
Rapeseed (Colza)	IJ	-1m,-1m,-1m,-1m
Platinum*	PL	- , - , - , - , - , -
F.C. Orange Juice (A)	JO	- , - , - , - , - , -
Feeder Cattle	FC	- , - , - , - , -1m , - , - , -

Legend: - : No adjustment

Source: UBS, Bloomberg

*As of H1-2013 the Platinum MDP adjustment was removed for liquidity and open interest reasons.

The matrix above shows the adjustment that must be made to the MDP date to obtain the MDP used in the calculation of the Daily Contract Proportions (CP). For example, "-1m" means that the na MDP date is adjusted backwards by one calendar month.

The following table proposes a few examples of calculations:

TABLE II.D.2. EXAMPLES OF ADJUSTMENT OF MDP FOR FIRST NOTICE DAYS AND EXPIRIES

Contract	Code	ENC	naMDP	MDPa	Adjusted contracts
WTI Crude Oil	CL	F,G,H,..Z	15(m)	- , - , - ,.. -	-
Gold	GC	G,J,M,V,Z	E(b+0) -1obd	- , - , - ,-1m, -	V
Soybeans	S	F,H,K,N,X	EOM(m-1)	- , - , - , - ,-1m	X
Sugar No.11	SB	H,K,N,V	21(m)	-1m, - , - , -	H
Sugar #5	QW	H,K,Q,V,Z	1(m+1)	-2m,-2m,-2m,-2m,-2m	H,K,Q,V,Z

Legend: 0 : No adjustment / F: Jan, G: Feb, H: Mar, J: Apr, K: May, M:Jun, N:Jul, Q:Aug, U:Sep, V:Oct, X:Nov, Z:Dec.

The following table proposes a few examples of calculations:

TABLE II.D.2. EXAMPLESOF ADJUSTMENT OF MDP FOR FIRST NOTICE DAYS AND EXPIRIES

Contract Expiry	naMDP	MDP	Comment
CLH07	15-Mar-07	15-Mar-07	No Adjustment
GCG07	16-Feb-07	16-Feb-07	No Adjustment
GCV07	15-Oct-07	15-Sep-07	October 2007 MDP is adjusted by 1 month backwards
SX07	30-Sep-07	31-Aug-07	November 2007 MDP is adjusted by 1 month backwards
SBV07	21-Oct-07	21-Oct-07	No Adjustment
SBH07	21-Mar-07	21-Feb-07	March 2007 MDP is adjusted by 1 month backwards
LSUH7	01-Apr-07	01-Feb-07	March 2007 MDP is adjusted by 2 month backwards

Source: UBS, Bloomberg

TABLE II.E.1. MIDDLE OF DELIVERY PERIODSREFERENCES

Contract	Exch.	BBG Ticker	Delivery Period or Cash settlement Date Reference
WTI Crude Oil 1	NYMEX	CL	http://www.cmegroup.com/trading/energy/crude-oil/light-sweet- crude_contract_specifications.html & http://www.cmegroup.com/rulebook/NYMEX/2/200.pdf
WTI Crude Oil 2	ICE	EN	https://www.theice.com/productguide/ProductDetails.shtml?specId=213
Brent Crude Oil	ICE	CO	https://www.theice.com/productguide/ProductDetails.shtml?specId=219
ULS Diesel	NYMEX	HO	http://www.cmegroup.com/trading/energy/refined-products/heating- oil_contract_specifications.html & http://www.cmegroup.com/rulebook/NYMEX/1a/150.pdf
Low Sulfur Gasoil	ICE	QS	https://www.theice.com/productguide/ProductDetails.shtml?specId=909
RBOB Gasoline	NYMEX	XB	http://www.cmegroup.com/trading/energy/refined-products/rbob- gasoline_contract_specifications.html & http://www.cmegroup.com/rulebook/NYMEX/1a/191.pdf
Natural Gas	NYMEX	NG	http://www.cmegroup.com/trading/energy/natural-gas/natural- gas_contract_specifications.html & http://www.cmegroup.com/rulebook/NYMEX/2/220.pdf
LME Copper	LME	LP	http://www.lme.com/copper.asp
High Grade Copper	COMEX	HG	http://www.cmegroup.com/trading/metals/base/copper_contract_specifications.html
LME Zinc	LME	LX	http://www.lme.com/zinc.asp
LME Aluminium	LME	LA	http://www.lme.com/aluminium.asp
LME Nickel	LME	LN	http://www.lme.com/nickel.asp
LME Lead	LME	LL	http://www.lme.com/lead.asp
Gold	COMEX	GC	http://www.cmegroup.com/trading/metals/precious/gold_contract_specifications.html & http://www.cmegroup.com/rulebook/NYMEX/1a/113.pdf
Silver	COMEX		http://www.cmegroup.com/trading/metals/precious/silver_contract_specifications.html & http://www.cmegroup.com/rulebook/NYMEX/1a/112.pdf
SRW Wheat	CBOT	W	http://www.cmegroup.com/trading/commodities/grain-and- oilseed/wheat_contract_specifications.html
Corn	CBOT	C	http://www.cmegroup.com/trading/commodities/grain-and- oilseed/corn_contract_specifications.html
Soybeans	CBOT	S	http://www.cmegroup.com/trading/commodities/grain-and- oilseed/soybean_contract_specifications.html
Soybean Meal	CBOT	SM	http://www.cmegroup.com/trading/commodities/grain-and-oilseed/soybean- meal_contract_specifications.html
Soybean Oil	CBOT	BO	http://www.cmegroup.com/trading/commodities/grain-and-oilseed/soybean- oil_contract_specifications.html
Sugar No.11	NYBOT	SB	https://www.theice.com/productguide/ProductDetails.shtml?specId=23
Sugar #5	EN	QW	http://www.euronext.com/trader/contractspecifications/derivative/wide/contractspecificati ons-2864-EN.html?euronextCode=W-LON-FUT

Cocoa	EN	QC	http://www.euronext.com/trader/contractspecifications/derivative/wide/contractspecificati ons-2864-EN.html?euronextCode=C-LON-FUT
Coffee "C"	NYBOT	KC	https://www.theice.com/productguide/ProductDetails.shtml?specId=15
Cotton No.2	INYBOT	CT	https://www.theice.com/productguide/ProductDetails.shtml?specId=254
Live Cattle	CME	LC	http://www.cmegroup.com/trading/commodities/livestock/live-cattle_contract_specifications.html
Lean Hogs	CME	LH	http://www.cmegroup.com/trading/commodities/livestock/lean-hogs_contract_specifications.html

Source: UBS, Bloomberg

TABLE II.E.2. MIDDLE OF DELIVERY PERIODSREFERENCES

Contract	Exch.	BBG Ticker	Delivery Period or Cash settlement Date Reference
Canola	WCE	RS	https://www.theice.com/productguide/ProductDetails.shtml?specId=251
Barley	WCE	WA	https://www.theice.com/productguide/ProductDetails.shtml?specId=5
Lumber (Random Lgth.)	CME	LB	http://www.cmegroup.com/trading/commodities/lumber-and-pulp/random-length-lumber_contract_specifications.html
Rough Rice	CME	RR	http://www.cmegroup.com/trading/commodities/grain-and-oilseed/rough-rice_contract_specifications.html
Rapeseed (Colza)	EN	IJ	http://www.euronext.com/trader/contractspecifications/derivative/wide/contractspecifications-2864-EN.html?euronextCode=OCO-PAR-OPT
Platinum	NYMEX	PL	http://www.cmegroup.com/trading/metals/precious/platinum_contract_specifications.html
F.C. Orange Juice (FCOJ)	NYBOT	JO	https://www.theice.com/productguide/ProductDetails.shtml?specId=30
HRW Wheat	KCBOT	KW	http://www.kcbt.com/contract_wheat.html & http://www.kcbt.com/histdata/rule_book/CH12.pdf

Source: UBS, Bloomberg

3.1.1.5.1. Daily Contract Proportions (CP)

As noted above, it is necessary to determine the portion of the CMCI attributable to a given component that is allocated to contracts or maturities along the curve for a given SCM. This is accomplished through the use of contract proportions (CP), which are in turn based on the relevant MDPs and DCMDs. The contract proportions are obtained by simple linear interpolation on middle delivery period dates. For a specific component c and SCM, we have:

$$CP1_{c,SCM,d} = \frac{\left(MDP_{2,d} - DCMD_{SCM,d}\right)}{\left(MDP_{2,d} - MDP_{1,d}\right)} \qquad (2a)$$

$$CP2_{c,SCM,d} = 1 - CP1_{c,SCM,d} = \frac{\left(DCMD_{SCM,d} - MDP_{1,d}\right)}{\left(MDP_{2,d} - MDP_{1},d\right)} \qquad (2b)$$

where:

$DCMD_{SCM,t}$ the Daily Constant Maturity Date, associated to a Standard Constant Maturity.

$MDP_{1,d}$ the MDP date for the futures contract which MDP date is immediately preceding the Daily Constant Maturity Date for time t. If such contract doesn't exist, then CP_1 is equal to 0.00 and by definition CP_2 is equal 1.00.

$MDP_{2,d}$ the MDP date for the futures contract which MDP date is equal or immediately following the Daily Constant Maturity Date for time t.

CP_1 and CP_2 depend explicitly on the date t chosen for the calculation. For the Price Index, $MDP_{1,d}$ and $MDP_{2,d}$ refer to the Middle Delivery Period corresponding to the calculation time t. For the Excess Return Index however, the $MDP_{1,d}$ and $MDP_{2,d}$ refer to the Middle Delivery Period corresponding to the calculation time t-1, explicit in the excess return index formulas. This is why we propose our notation with the date d, and not t.

When, for a specific component, the Standard Constant Maturity tenor is limited by a Constant Maturity boundary (CMB), the definition of Contract proportions uses the associated CMB and becomes:

$$CP1_{c,CMB,d} = \frac{\left(MDP_{2,d} - DCMD_{CMB,d}\right)}{\left(MDP_{2,d} - MDP_{1,d}\right)} \qquad (2c)$$

$$CP2_{c,CMB,d} = 1 - CP1_{c,CMB,d} = \frac{\left(DCMD_{CMB,d} - MDP_{1,d}\right)}{\left(MDP_{2,d} - MDP_{1,d}\right)} \qquad (2d)$$

When an exchange facility amends the delivery mechanism on a component, the Index Administrator decides if new MDPs have to be determined for the amended contracts. CMCI calculations, and in particular the transition to new MDPs, are then performed according to the procedure described in Appendix B.3.

3.1.1.5.2. Daily Constant Maturity Forward Price (DCMFP)

For a given SCM, the Daily Constant Maturity Forward Price of a specific component is the price used to calculate relevant components of the CMCI for that tenor. The Daily Constant Maturity Forward Price of a component c, takes the following expression:

$$DCMFP_{c,SCM,t,d} = DCNP1_{c,t,d} \times CP1_{c,SCM,d} + DCNP2_{c,t,d} \times CP2_{c,SCM,d} \qquad (3)$$

Where:

c	denotes component commodity c,
t	is the calculation date (by definition, a CMCI Business Day),
d	is the reference date for which contract proportions are calculated (please refer to Appendix B.2 and Section 3.1.1.4 above for further details); and, for a component c, a Standard Constant Maturity SCM and a calculation date t:
$DCNP1_{c,t,d}$	is the Daily Contract Nearby Price at date t, that is to say the Forward or Futures Contract price associated with the futures contract whose MDP date is equal or immediately preceding the Daily Constant Maturity Date associated with the reference date d, (related to the specified Standard Constant Maturity or Constant Maturity Boundary), as defined by the Eligible Nearby Contract table,
$DCNP2_{c,t,d}$	is the Daily Contract Nearby Price at date t, that is to say the Forward or Futures Contract price associated with the futures contract whose MDP date is immediately following the Daily Constant Maturity Date associated with the reference date d (related to the specified Standard Constant Maturity or Constant Maturity Boundary), as defined by the Eligible Nearby Contract table.

When, for a specific component, the Standard Constant Maturity tenor is limited by a Constant Maturity boundary (CMB), the definition of the Constant Maturity Forward Price is simply amended using CMB instead of SCM.

$$DCMFP_{c,CMB,t,d} = DCNP1_{c,t,d} \times CP1_{c,CMB,d} + DCNP2_{c,t,d} \times CP2_{c,CMB,d} \qquad (3b)$$

3.1.2. The use of Constant Maturity Forwards in the CMCI

For each Index, the Index Administrator calculates and publishes three indices:

- The Price Index (CMCI-PI),
- The Excess Return (CMCI-ER),
- The Total Return (CMCI-TR).

All three series are calculated for the following maturities:

- 3 Months (3M),
- 6 Months (6M),
- 1 Year (12M),
- 2 Years (24M).
- 3 Years (36M).

3.2. The CMCI-Price Index (CMCI-PI)

For the purpose of the calculation of the CMCI, we differentiate the calculations taking place during rebalancing periods, or Maintenance Periods, and those performed during non-rebalancing periods, or non-Maintenance Periods. These distinctions apply equally to the Price Index (PI), the Excess Return (ER) and Total Return (TR) indices. Rebalancing periods take place each month and are used to rebalance the components of the CMCI to their Target Weights, as discussed below in Section 3.2.3. Maintenance Periods, which occur once annually, involve rebalancing but also a re- weighting of the Index components to take into account new Target Weights. Non-rebalancing periods and non- Maintenance Periods refer to periods other than those in which a rebalancing or re-weighting takes place.

3.2.1. The Price Index during non-Maintenance Periods

The CMCI Price Index (CMCI-PI) is a representation of commodity price levels for a designated part of the forward curve and calculated on the basis of the prices of the CMCI Constant Maturity Forwards on the relevant commodities for the appropriate tenors.

During a non-Maintenance Period, the CMCI-PI calculated for a family of defined Standard Constant Maturities (SCM) is obtained by the multiplication of the Basket Value (BV) (which represents the value of a component or group of components of the CMCI) by the Maintenance Factor (MF). The Maintenance Factor is used to prevent any discontinuity of the price index associated with changes in nominal weights over time. For any non-maintenance days, BV is calculated for each component as the Sum of Daily Constant Maturity Forward Price (DCMFP) of each basket component multiplied by the respective Component Nominal Weight (CNW). The DCMFP are adjusted by price scalars reflecting reference foreign currency exchange rates versus, for example, the U.S. Dollar, such that all DCMFP are expressed in the same currency.

For non-maintenance days and, for example, on the USD index, we have:

$$\mathrm{CMCI-PI}_{\mathrm{USD,SCM,t}} = \mathrm{MF}_{\mathrm{SCM,USD}} \times \sum_{\mathrm{c=1,N}} \mathrm{DCV}_{\mathrm{c,USD,SCM,t,t}} = \mathrm{MF}_{\mathrm{SCM,USD}} \times \mathrm{BV}_{\mathrm{USD,SCM,t,t}} \quad (4)$$

and

$$DCV_{c,USD,SCM,t,t} = IsIn_{c,Index} \times DCMFP_{c,SCM,t,t} \times CNW_{c,SCM} \times \left[FX_{USD,c,t}\right]^{\mathrm{CCYScalar}_{\mathrm{USD,ccy}}} \quad (5)$$

where:

$BV_{USD,SCM,t,t}$ is the Basket Value (i.e for any given index, the sum of Daily Component Value), $DCV_{c,USD,SCM,t,t}$ is the Daily Component Value calculated at time t,

$CNW_{c,SCM,t}$ is the Component Nominal Weight for a component c and for a specific Standard Constant Maturity (SCM),

$DCMFP_{c,SCM,t,t}$ is the Daily Constant Maturity Forward Price, for a component c and for a specific SCM, calculated at time t and with Contract Proportions taken at time t.

$FX_{USD,c,t}$ is the Currency exchange rate between the quotation currency of the component instrument and the Index currency reference (ICR) in which the Index is expressed (here USD). For official settlement prices, the CMCI uses a direct or USD cross fixing price.

For the USD direct rate quotes, the price source is set to Bloomberg on page CCY F143 Curncy HP<GO> (Note the Location Time zone is set to "New-York"). Cross rates are calculated (please see Appendix A) so that the foreign exchange adjustment within the Index features no possible arbitrage.

$IsIn_{c,Index}$ a scalar factor with positive value, which allows to control the component c's effective weight in the calculated index.

$CCYScalar_{USD,CCY}$ is +1 or –1 (please see Table III below) CMCI Price Indices are set equal to 1000 on 29 January 2007.

The reader will note that we use Spot currency rates in all cases. It is our opinion that the use of forward currency rates would alter significantly both the transparency and simplicity of the Index definitions without providing substantial benefit to the Index, as we see that returns on forward currency rates as being highly correlated with their spot rates.

Indices for each SCM are calculated in U.S. Dollars (USD) and Euro (EUR). Table III below features the CMCI FX price/rate sources (please see Appendix A for further details).

TABLE III. DEFINITION CCY EXCHANGE RATES, CCY SCALARS DEFINITIONS, AND CROSS RATES CALCULATIONS

CCY	CCY Pair	Quotation	USD: CCYScalarUSD,CCY	Rate Source
USD			1	
JPY	**USD-JPY**	JPY per USD	-1	BB: JPY F143 Curncy HP <GO>
AUD	**AUD-USD**	USD per AUD	1	BB: AUD F143 Curncy HP <GO>
EUR	**EUR-USD**	USD per EUR	1	BB: EUR F143 Curncy HP <GO>
GBP	**GBP-USD**	USD per GBP	1	BB: GBP F143 Curncy HP <GO>
CAD	**USD-CAD**	CAD per USD	-1	BB: CAD F143 Curncy HP <GO>
CHF	**USD-CHF**	CHF per USD	-1	BB: CHF F143 Curncy HP <GO>

Source: UBS, Bloomberg

The generic expression for any Index Currency Reference (ICR) is:

$$CMCI - PI_{ICR,SCM,t} = MF_{SCM,ICR} \times \sum_{c=1,N} DCV_{c,ICR,SCM,t,t} = MF_{SCM,ICR} \times BV_{ICR,SCM,t,t} \quad (6)$$

where:

$$DCV_{c,ICR,SCM,t,t} = IsIn_{c,Index} \times DCMFP_{c,SCM,t,t} \times CNW_{c,SCM} \times \left[FX_{ICR,c,t}\right]^{CCYScalar_{ICR,ccy}} \quad (7)$$

The standard specifications for the components included in the Index are provided in Appendix D.

3.2.2. Index continuity maintenance

As noted, the CMCI rebalances monthly which implies new Component Nominal Weights (CNWs) and Maintenance Factors (MFs) for each month. In July, the CMCI also rolls into new Target Weights (TWs) following the decisions of the Index Administrator.

On the day before the start of the rebalancing period, the CMCI is calculated based on the old CNWs (reflecting old TWs) and MFs used so far in the calculation.

The first part of the formula is then adjusted for the Maintenance Factor changes, and multiplied by the Basket Value Ratio (BVR) which reflects the change in the Basket Value resulting from the shift from the Old to the New TWs and therefore also to the new CNWs.

The process also applies to all monthly rebalancing, as well as the July Maintenance Period. During Maintenance Period, the calculation formula for BV is:

$$BV_{ICR,SCM,t,t} = MF_{ICR,old} / MF_{ICR,new} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,old} \times RP1_{c,t} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{\text{CCYScalar}_{\text{ICR,ccy}}} \right.$$
$$\left. + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,new} \times RP2_{c,t} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{\text{CCYScalar}_{\text{ICR,ccy}}} \right], \quad (8)$$

Where

$RP1_{c,t}$ and $RP2_{c,t}$ the rebalancing proportions for component c, at calculation date t (as defined in Section 1.3).

New Maintenance Factors are calculated at the close of business on the CMCI Business Day immediately pre-ceding the first maintenance day, and their values used for subsequent calculations:

$$BVR_{ICR,SCM,t,t} = \frac{\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{\text{CCYScalar}_{\text{ICR,ccy}}}}{\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,SCM,old} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{\text{CCYScalar}_{\text{ICR,ccy}}}}, \quad (9)$$

Where BVR is the Basket Value Ratio.

We then obtain:

$$\text{MF}_{\text{ICR,SCM,new}} = \frac{\text{MF}_{\text{ICR,SCM,old}}}{\text{BVR}_{\text{ICR,SCM,t,t}}}, \quad (10)$$

In order to account for Market Disruption Events during the rebalancing period, Rebalancing Proportions (RP) are introduced as a functions of each component and are noted $RP1_{c,t}$ and $RP2_{c,t}$.

If a Market Disruption Event occurs during the rebalancing period, the percentage amount being rebalanced on such a day is deemed to be rebalanced on the following CMCI Business Day. If there is a disruption event on or beyond the last business day of the month, the amount to be rebalanced will be carried forward until the next CMCI Business Day.

The following Table V shows an example of values taken by RP1 and RP2 for a single specific component, for both the PI and the ER index over the March 2006 rebalancing period.

TABLE V. STANDARD REBALANCING PERIOD, CALCULATION OF REBALANCING PROPORTIONS

Theoretical Schedule				**1st day**	**2nd day**	**Last day**				
Index	**\ bday**	Feb22	Feb23	Feb24	Feb27	Feb28	Mar01	Mar02	Mar03	Mar06
PI	RP1	1.00	1.00	0.666	0.333	0.00	1.00	1.00	1.00	1.00
	RP2	0.00	0.00	0.333	0.666	1.00	0.00	0.00	0.00	0.00
ER	RP1	1.00	1.00	1.00	0.666	0.333	0.00	1.00	1.00	1.00
	RP2	0.00	0.00	0.00	0.333	0.666	1.00	0.00	0.00	0.00

Source: UBS, Bloomberg

3.2.3. The Index rebalancing mechanism and the calculation of the CNWs

As noted above, the CMCI is rebalanced monthly in order to bring the components back into line with their Target Weights. This rebalancing is necessitated by the fact that the CMCI weightings are in part based on the prices of each of the constituent constant maturity forward prices and naturally over-weights the best performing assets and under- weights the worst performing assets. As market prices fluctuate, therefore, the effective weights of the constituent components drift from their initial Target Weights. As a result, it is necessary to re-balance the Index periodically to maintain its original weighting.

This is accomplished by rebalancing the components weights during each Maintenance Period. The process is automatic and is implemented via a pre-defined algorithm.

The calculation of the new CNWs is effected monthly, at the close of business on the business day immediately preceding the first rebalancing day (i.e. the fourth to last business day of the month).

On that day, the new CNWs are calculated such that the effective weights match the Component Target Weights (TW), defined for the next period. At the close of business on the day prior to the first maintenance day, using known settlement prices, we solve for CNWs.

Without loss of generality, we define $CNW_{N,SCM,new} = x$ as an arbitrary constant.

For all components in the composite index, we then solve for:

$$\frac{CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR, ccy}}}}{\sum_{c=1,N} CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR, ccy}}}} - TW_{c,\%} = 0 \qquad (11)$$

Also note that:

TW1 + … + TWN = 1

For notation purposes, one introduces currency denominated quantities:

$$XDCMFP_{ICR,c,SCM,t,t} = DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR, ccy}}}$$

$$XDCMFP_{c} = XDCMFP_{ICR,c,SCM,t,t}$$

As shown in Appendix C, this system has the following analytic solution:

$$\begin{aligned}
CNW_{ICR,1,SCM,new} &= \frac{TW_1 . XDCMFP_N}{TW_N . XDCMFP_1} x \\
CNW_{ICR,2,SCM,new} &= \frac{TW_2 . XDCMFP_N}{TW_N . XDCMFP_2} x \\
CNW_{ICR,3,SCM,new} &= \frac{TW_3 . XDCMFP_N}{TW_N . XDCMFP_3} x \\
&\cdots \\
CNW_{ICR,N,SCM,new} &= x
\end{aligned} \qquad (12)$$

Once new CNWs are calibrated for each SCM, the new Maintenance Factors (MF) for each index are calculated as per (10) above, and the CNWs are made available for the calculation of the composite index (CMCI) as well as all commodity group (or sector) and single component indices.

3.3. The CMCI Excess Return (CMCI-ER)

3.3.1. Calculation during Non-Maintenance Periods

The CMCI Excess Return Index is calculated on each CMCI Business Day and represents the uncollateralized return of the CMCI basket over time, and for one specific SCM. The Index has the following expression:

$$\text{CMCI} - \text{ER}_{\text{ICR,SCM,t}} = \text{CMCI} - \text{ER}_{\text{ICR,SCM,t-1}} \times \left(1 + \text{IDR}_{\text{ICR,SCM,t}}\right) \qquad (13)$$

With:

$$\mathrm{IDR}_{\mathrm{ICR,SCM},t} = \frac{\mathrm{BVF}}{\mathrm{BVI}} - 1 = \frac{\mathrm{BV}_{\mathrm{ICR,SCM},t,t-1}}{\mathrm{BV}_{\mathrm{ICR,SCM},t-1,t-1}} - 1 \qquad (14)$$

$$BVI = BV_{ICR,SCM,t-1,t-1} = \sum_{c=1,N} XDCMFP_{ICR,c,SCM,t-1,t-1} \times CNW_{c,SCM} \times IsIn_{c,Index}$$

$$BVF = BV_{ICR,SCM,t,t-1} = \sum_{c=1,N} XDCMFP_{ICR,c,SCM,t,t-1} \times CNW_{c,SCM} \times IsIn_{c,Index}$$

where:

$\mathrm{IDR}_{\mathrm{ICR,SCM},t}$	is the Index Daily Return, for a specified Currency Reference (ICR) and Standard Constant Maturity at time t.
BVF	is the Basket Value Final, calculated for an Index currency reference ICR, a Standard Constant Maturity SCM, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,
BVI	is the Basket Value Initial, calculated for an Index currency reference ICR, a Standard Constant Maturity SCM, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,
$\mathrm{XDCMFP}_{\mathrm{ICR,c,SCM,t,t\text{-}1}}$	is the Currency translated Daily Constant Maturity Forward Price, calculated for an Index currency reference ICR, a Standard Constant Maturity SCM, for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1 (as defined in Section 3.1.1.5.2.),
$\mathrm{IsIn}_{\mathrm{c,Index}}$	a scalar factor with positive value, which allows to control the component c's effective weight in the calculated index.

CMCI Excess Return Indices are set equal to 1000 on 29 January 2007.

3.3.2. Calculation during Maintenance Periods

The Index Daily Return is defined as the percentage change in the BV of the CMCI from one CMCI Business Day to the next. It reflects the return that would have been realized by holding positions in the DCMF to reflect the CNWs (TWs), from the closing of the trading platform on the prior CMCI Business Day to the closing of the trading platform on the next CMCI Business Day.

The daily Rebalancing Proportions (RP) used to calculate BVI and BVF are identical to those used to calculate the CMCI Price Index on the CMCI Business Day immediately preceding the calculation date. During a standard rebalancing period from the first to the last CMCI Business Day of the rebalancing period we have:

$$BVI_{ICR,SCM,t-1,t-1} = MF_{ICR,SCM,old} / MF_{ICR,SCM,new} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,old} \times RP1_{c,t-1} \times XDCMFP_{ICR,SCM,c,t-1,t-1} \right] + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,new} \times RP2_{c,t-1} \times XDCMFP_{ICR,SCM,c,t-1,t-1} \qquad (13)$$

and

$$BVF_{ICR,SCM,t,t-1} = MF_{ICR,SCM,old} / MF_{ICR,SCM,new} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,old} \times RP1_{c,t-1} \times XDCMFP_{ICR,SCM,c,t,t-1} \right] + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,new} \times RP2_{c,t-1} \times XDCMFP_{ICR,SCM,c,t,t-1} \qquad (14)$$

where RP1 and RP2 can take the following values

$$RP1_{c,t} = \{1.0, 2/3, 1/3, 0.0\} \quad , \quad RP2_{c,t} = 1 - RP1_{c,t} = \{0.0, 1/3, 2/3, 1.0\}$$

3.4. The CMCI Total Return (CMCI-TR)

3.4.1. Calculation of the Total Return Index

CMCI-TR is derived from the CMCI Excess Return Index. In addition to uncollateralized returns generated from the CMCI basket, a daily fixed income return is added and the Index value takes the following expression:

$$\text{CMCI} - \text{TR}_{ICR,SCM,t} = \text{CMCI} - \text{TR}_{ICR,SCM,t-1} \times DITRF_{ICR,SCM,t}$$

where:

$$DITRF_{ICR,SCM,t} = \left(1 + IDR_{ICR,SCM,t} + IRR_{ICR,t}\right) \qquad (15b)$$

IRR — **Interest Rate Return** is the compounding factor calculated for ach Index Currency reference,

$IDR_{ICR,SCM,t}$ — is the Index Daily Return, for a specified Index Currency Reference (ICR) and Standard Constant Maturity at time t.

The fixed income return component of the Total Return Index reflects the interest earned on securities theoretically based on the notional for hypothetical positions in the contracts comprising the Index.

In order to determine the Interest Rate Return (IRR) component of the TR indices, Daily Reference Rate (DRR) for the currency in which the index is quotes (ICR) needs to be determined (see Section 3.4.2. for details on each available currency).

DRR — **Daily Reference Rate** is a function of the rate available on the immediately preceding CMCI Business Day (ARR), the ARRA and ARRS. The form of the compounding expression is a function of the Index Currency Reference (ICR) defined below, and DRR takes the following form:

$$DRR_{ICR,t} = ARRS_{ICR,t} \times ARR_{ICR,t} + ARRA_{ICR,t} \qquad (16)$$

ARRA & ARRS — **Available Reference Rate Adjustment** and **Available Reference Rate Scalar** are respectively the rate adjustment and scalar factor used - when applicable - to reflect any particular funding cost or rate differential applicable and associated to an ICR for an A+/A-1 (S&P) and/or Aa3/P-1 (Moodys) issuer. The ARRA and ARRS can change periodically to reflect market conditions.

caldays — is the integer number of Calendar days from the previous CMCI Business Day to the CMCI Business Day on which the calculation is made.

CMCI Total Return Indices are set equal to 1000 on 29 January 2007.

3.4.2. Available Reference Rates

Available Reference Rates used for the calculation of the respective CMCI Total Return indices are defined below.

USD	ARR	91-Day U.S. Treasury Bill (3 Months) auction rate, designated as high Rate as published by the Treasury Security Auction Results report, published by the Bureau of public Debt currently available on the web site https://www.treasurydirect.gov/instit/annceresult/press/press_auctionresults.htm or Bloomberg USB3MTA Index<GO> or Reuters USAUCTION9. The rate is generally published once per week on Monday and effected on the CMCI Business Day immediately following.

ARRA 0.0%

ARRS 1.0

IRR $$IRR_{USD,t} = \left[\frac{1}{1 - \frac{91}{360} \times DRR_{USD,t-1}} \right]^{\frac{caldays}{91}} - 1, \qquad (17a)$$

EUR ARR The overnight Euro rate, determined from the Euro Overnight Index (BBG Code: EONIA Index <GO>; Reuters: EONIA Page, EONIA= for history), which is the weighted average rate of all unsecured Euro overnight cash transactions brokered in London between midnight and 4.00pm London time. EONIA is calculated from details supplied by Wholesale Market Brokers Association "WMBA".

The ECB shall aim to make the computed rate available to Reuters for publication as soon as possible so that Eonia® be published between 6.45 p.m. and 7.00 p.m. (CET) on the same evening. The rate would be and effected on the CMCI Business Day immediately following.

ARRA -0.10%

ARRS 1.0

IRR $$IRR_{EUR,t} = \left[\frac{1}{1 - \frac{90}{360} \times DRR_{EUR,t-1}} \right]^{\frac{caldays}{90}} - 1 \qquad (17e)$$

CHF ARR The overnight Swiss Franc rate represented by the Swiss Average Rate Overnight 'SARON' (BBG Code: SRFXON3 Index <GO>; Reuters: SARON.S) Source is SIX Swiss Exchange.

The closing rate fixing is published daily at 6:00 PM Zurich time and effected on the CMCI Business Day immediately following.

ARRA -0.10%

ARRS 1.0

IRR $$IRR_{CHF,t} = \left[\frac{1}{1 - \frac{90}{360} \times DRR_{CHF,t-1}} \right]^{\frac{caldays}{90}} - 1 \qquad (17e)$$

JPY ARR The overnight Yen rate, derived from the Mutan Overnight Average Call Rate (BBG Code: MUTKCALM Index <GO>; Reuters:TANSHK, JPONMU=RR FOR HISTORICAL), as published daily by Bank of Japan

The rate is published daily 8:00 AM London time and effected on the CMCI Business Day immediately following.

ARRA -0.15%

ARRS 1.0

IRR

$$IRR_{JPY,t} = \left[\frac{1}{1-\frac{90}{360}\times DRR_{JPY,t-1}}\right]^{\frac{caldays}{90}} - 1 \qquad (17e)$$

GBP ARR The Sterling overnight rate, represented by SONIA (BBG Code: SONIO/N Index <GO>; Reuters: SONIA Page, SONIAOSR= for history), which is the weighted average of all unsecured Sterling overnight cash transactions brokered in London between Midnight and 4.15pm. (WMBA).

The rate is published daily 5:00 PM London time and effected on the CMCI Business Day immediately following.

ARRA -0.10%[36]

ARRS 1.0

IRR

$$IRR_{GBP,t} = \left[\frac{1}{1-\frac{91}{365}\times DRR_{GBP,t-1}}\right]^{\frac{caldays}{91}} - 1 \qquad (17e)$$

AUD ARR The overnight Australian Dollar rate (BBG Code: RBACOR Index <GO>; Reuters: RBA30 PAGE, AUCASH=RBAA), determined from the Reserve Bank of Australia Cash Rate Overnight. Source is Australian Bureau of Statistics.

The rate is published on any Australian business and banking days at approximately 8:30 PM Sydney time and effected on the CMCI Business Day immediately following.

ARRA -0.20%

ARRS 1.0

IRR

$$IRR_{AUD,t} = \left[\frac{1}{1-\frac{91}{365}\times DRR_{AUD,t-1}}\right]^{\frac{calcdays}{91}} - 1 \qquad (17e)$$

CAD ARR The Canadian Dollar overnight rate, represented by Canadian Overnight Repo Rate Average ("CORRA") (BBG Code: CAONREPO Index <GO>; Reuters: BOCWATCH, CORRA=FOR HISTORICAL), published by the Bank of Canada

The rate is published daily at 2:00 PM London time and effected on the CM Business Day immediately following.

ARRA -0.15%

ARRS 1.0

IRR

$$IRR_{CAD,t} = \left[\frac{1}{1-\frac{91}{365}\times DRR_{CAD,t-1}}\right]^{\frac{calcdays}{91}} - 1 \qquad (17e)$$

SGD ARR Singapore Domestic Interbank Overnight Rate Average, published by the Monetary Authority of Singapore (BBG Code: SIBCSORA Index <GO>).

The rate is published daily and effected on the CMCI Business Day immediately following.

ARRA -0.15%

ARRS 1.0

IRR

$$IRR_{SGD,t} = \left[\frac{1}{1 - \frac{91}{365} \times DRR_{SGD,t-1}} \right]^{\frac{\text{calcdays}}{91}} - 1 \qquad (17e)$$

Also please see Section 3.6.4. for the definition of Interest Rate Disruption Events.

3.5. The CMCI Currency Hedged Indices (XMCI)

CMCI Currency Hedged indices aim to facilitate CMCI investment in currencies other than the US Dollar. All Currency Hedged indices are prefixed by the letter X.

3.5.1. Currency Hedged Excess Return Indices

Currency Hedged Excess Return Indices are calculated as per the following formula:

$$XMCI - ER_{ICR,SCM,t} = XMCI - ER_{ICR,SCM,t-1} \times \left[1 + \left(\frac{CMCI - ER_{USD,SCM,t}}{CMCI - ER_{USD,SCM,t-1}} - 1 \right) \times \frac{\left(FX_{IR,t-1}\right)^{CCYScalar_{ICR,USD}}}{\left(FX_{IR,t}\right)^{CCYScalar_{ICR,USD}}} \right]$$

where:

CMCI-ER	the underlying USD CMCI Excess Return Index (or Sub index) taken as a reference for the calculation of the uncollateralized commodity return
$FX_{ICR,t}$	is the Currency exchange rate between the USD and the Index currency reference (ICR) for a given date t. Price source is CCY F143 Curncy HP <GO>
t	is the CMCI Business Day on which the calculation is made
$CCYScalar_{USD,CCY}$	is +1 or –1 (please see Table III in Section 3.2.1.)

XMCI Excess Return Indices are set equal to 1000 on 29 January 2007.

3.5.2. Currency Hedged Total Return Indices

Currency Hedged Total Return Indices are calculated as per the following formula:

$$XMCI-TR_{ICR,SCM,t} = XMCI-TR_{ICR,SCM,t-1} \times \left[1+\left(\frac{\text{CMCI - ER}_{\text{USD,SCM,t}}}{\text{CMCI - ER}_{\text{USD,SCM,t-1}}}-1\right)\times\frac{\left(FX_{ICR,t-1}\right)^{CCYScala_{ICR,USD}}}{\left(FX_{ICR,t}\right)^{CCYScala_{ICR,USD}}}+IRR_{ICR,t}\right] \quad (21)$$

where:

IRR	Interest Rate Return is the compounding factor calculated for each Index Currency reference as defined in Section 1.3.1.

XMCI Total Return Indices are set equal to 1000 on 29 January 2007.

3.6. CMCI Business Day Conventions

3.6.1. Daily Minimum Target Weight

A day is deemed an open CMCI Business Day when the daily minimum CMCI Target Weights (TW) for the composite index with the shortest available constant maturity components (3M) are greater than or equal to 50%. When an Exchange Facility is closed for trading as a result of a normal and foreseeable schedule published by such facility (holidays, and bank holiday), the Target Weights will have 0% weight when calculating the daily minimum CMCI target weight.

3.6.2. Adjustments for Market Disruption Event Day

When an exchange fails to publish a settlement price for components involved in any of the CMCI maintenance procedures (rebalancing or re-weighting), the CMCI Business Day is deemed a market disruption event day.

When an exchange fails to publish a settlement price for components involved in any of the monthly CMCI rebalancing (on the 4th to last business day of the month) the previous business days settlement prices of the individual components will be used to derive the Daily Constant Maturity Forward Price (DCMFP) to calculate the new Component Nominal Weights (CNW's), the Tenor Weight Adjusting Factor (TWAF) and the Maintenance Factors (MF). The previous business day settlement prices of the individual components will also be used to derive the Daily Constant Maturity Forward Price (DCMFP) in the CMCI calculations.

On any CMCI Business Day when an exchange fails to publish a settlement price, the components involved are not rolled. For those contracts or components, the RPs remain identical to the value they had on the CMCI Business Day immediately preceding the market disruption event day in such a way that the maintenance period is extended for as long as no settlement price is made available by the exchange.

The following Table VI shows an example of values taken by RP1 and RP2 for a single specific component, for both the PI and the ER index over the March 2006 maintenance period if 26 February is deemed a market disruption event.

TABLE VI. REBALANCING PERIOD, CALCULATION OF REBALANCING PROPORTIONS AND MARKET DISRUPTION EVENT DAYS

Theoretical Maintenance Schedule					1st day	2nd day	Last day				
Effective Maintenance Schedule						1st and 2nd day	Last day				
Index	**\ bday**	Feb 22	Feb 23	Feb 24	Feb 27	Feb 28	Mar 01	Mar 02	Mar 03	Mar 06
PI	RP1	1.00	1.00	1.00	0.333	0.00	1.00	1.00	1.00	1.00
	RP2	0.00	0.00	0.00	0.666	1.00	0.00	0.00	0.00	0.00
ER	RP1	1.00	1.00	1.00	1.00	0.333	0.00	1.00	1.00	1.00
	RP2	0.00	0.00	0.00	0.00	0.666	1.00	0.00	0.00	0.00

Source: UBS, Bloomberg

If, after a period of five standard business days, no settlement price has been made available by the affected exchange or trading platform, the Index Administrator will determine, in good faith, taking into account the objectives of the Index and the interests of market participants, the one or more exchange settlement or official

closing prices necessary for the maintenance of the component and the calculation of the Index.

When a Market Disruption Event Date falls during a non- Maintenance Period, the Index is calculated using the last available trading price available on the exchange, obtained by the Index Administrator from commercially reasonable sources in the market, or determined in good faith by the Index Administrator.

3.6.3. Adjustments for FX Market Disruption Event Day

In the event of a reference price source failing to publish a valid fixing rate for a referenced currency exchange rate, the CMCI Business Day is deemed an FX Market Disruption Event Day.

If no fixing price has been made available by the affected price source, the one or more foreign exchange currency rates fixing prices necessary for the calculation of the Index will be obtained by the Index Administrator from commercially reasonable sources in the market, or determined in good faith, bearing in mind both the interests of investors and market participants, and with the aim of maintaining and enhancing the CMCI as a tradable commodity investment benchmark.

A commercially reasonable method would be, for example, the averaging of three foreign exchange broker-dealer quotes at the approximate time when the fixing would have been determined by the price source.

In the event the rate source becomes permanently deficient, the Index Administrator may characterize the event as a Force Majeure Event and decide to replace it by a new source effective immediately thereafter.

3.6.4. Interest Rate Disruption Event

In the event of a holiday, a Market Disruption Event day affecting the release of an interest rate reference, or other disruption in treasury auction calendars, the last available rate is used until the next rate becomes available.

In the event of the interest rate source becoming permanently deficient, the Index Administrator may characterize the event as a Force Majeure Event and decide to replace it by a new source effective immediately thereafter.

3.7. Market Emergency and Force Majeure

In some extraordinary circumstances, the Index Administrator may characterize the situation as a Market Emergency and Force Majeure Event, if, in the judgment of the Index Administrator the circumstances are reasonably likely to have a material adverse effect on the tradability of the CMCI or the ability of the Index to serve as a tradable benchmark for the commodities market.

Such circumstances include the following:

- The imposition of a currency control mechanism,
- The adoption or issuance of tax related rules, regulations, orders or other actions,
- an announcement or other public action regarding scientific discoveries or events relating to the commodities markets,
- a governmental, regulatory or other public announcement that is reasonably likely to affect the commodity markets generally,
- any climate or weather related emergencies,
- a war,
- a terrorist event,
- any event other than those specifically identified herein, making the calculation of the CMCI impossible or infeasible either on a technical basis or otherwise, or that makes the CMCI non representative of market prices or undermines the realization of the objectives of the Index,
- any event creating a situation of unfair advantage or disadvantage for any market participant, group of market participants or the Index Administrator

Whenever a Market Emergency and Force Majeure Event has been identified or declared, the Index Administrator can decide to take any appropriate action, including:

- the replacement of a Daily Contract Nearby Price (see formula (3), DCNP) when there is a manifest error in the officially settled price or when a market abuse (please see the U.K. Financial Services Authority, FSA, definitions) is likely to have taken place,
- the temporary or final revoking of the membership of a Component in the Index,
- the immediate change of an Index parameter,
- the suspension of the calculation of the Index, a sub-Index, a Standard Constant Maturity series or a currency series, or,
- in general, any action necessary to preserve the reputation of the CMCI as fair and tradable commodity benchmark

4. The CMCI Benchmark Index Calculation Methodology

4.1 Construction of the CMCI Benchmark Index

The CMCI Benchmark Index is built on the basis of the CMCI index. As such, the benchmark index strictly respects the original CMCI component weight distribution and allocates, for each component, portions of the weights defined by the CMCI Weighting engine to eligible Standard Constant Maturities (SCM). Like the CMCI, the benchmark index also rebalances on a monthly basis.

Another notable addition to the technical framework is the curve rebalancing mechanism, a procedure designed to provide additional weight control over the fluctuations of the structures of forward curves.

The following section provides a detailed explanation for the calculation of the CMCI Price Index, Excess Return and Total Return Benchmark Indices.

4.2 The CMCI Benchmark - Price Index (CMCIB-PI)

For the purpose of the calculation of the CMCI Benchmark Index, as well as the CMCI Index from which Benchmark is derived, we differentiate the calculations taking place during rebalancing periods, or maintenance periods, and those performed during non-rebalancing periods, or non-Maintenance Periods. These distinctions apply equally to the Benchmark Price Index (PI), the Excess Return (ER) and Total Return (TR) indices.

Rebalancing periods take place each month and are used to rebalance the components of the CMCI to their Target Weights, as discussed in Section 3.2.3 of this Technical Document. Curve Rebalancing periods take place each month and are used to rebalance Benchmark's exposure to the respective segments of the forward curve on each components of the CMCI to their respective Individual Tenor Weights (ITW), as discussed below in Section 3.7.2.3.

Maintenance Periods, which occur once annually, involve rebalancing but also a possible re-weighting of the CMCI Index components to take into account new CMCI Target Weights. Non-rebalancing periods and non-Maintenance Periods refer to periods other than those in which a rebalancing or re-weighting takes place.

4.2.1 The Price Index during non-Maintenance Periods

The CMCI Benchmark Price Index (CMCIB-PI) is a representation of commodity price levels for the eligible segment forward curve and calculated on the basis of the prices of the CMCI Constant Maturity Forwards on the relevant commodities.

During non-Maintenance Periods, the CMCIB-PI is obtained by the multiplication of the Curve Value (CV) (which represents the value of the tradable forward curve for a component or group of components of the CMCI Benchmark Index) by the Maintenance Factor (MF). The Maintenance Factor, unique to each index (i.e. a function of each basket composition), is used to prevent any discontinuity of the price index associated with changes in nominal weights over time.

For any non-maintenance days, CV is calculated for each component as the sum of Curve Component Values, which, in turn, is equal to the sum, for each Standard Constant Maturity (SCM), of Daily Constant Maturity Forward Price (DCMFP) multiplied by the respective Component Nominal Weight (CNW) and by the respective Tenor Weight Adjustment Factors (TWAF). The DCMFP are adjusted by price scalars reflecting reference foreign currency exchange rates versus the Reference Currency (ICR), such that all DCMFP are expressed in the same currency.

For non-maintenance days we have:

$$CMCIH - PI_{ICR,t} = MF_{ICR} \times CV_{ICR,t,t} = MF_{ICR} \times \sum_{c=1,N} CCV_{c,ICR,t,t} \qquad (1)$$

and

$$CCV_{c,ICR,t,d} = \sum_{j=1,AT} IsIn_{c,j,Index} \times CNW_{c,j} \times TWAF_{c,j} \times DCMFP_{c,j,t,d} \times \left[FX_{ICR,c,t}\right]^{CCYScalar_{ICR,ccy}} \quad (2)$$

Where:

$CV_{ICR,t,t}$	is the Curve Value (i.e for any given index, the sum of Curve Component Value),
$CCV_{c,ICR,t,t}$	is the Curve Component Value for a component c calculated at time t,
$CNW_{c,j}$	is the Component Nominal Weight for a component c and a Standard Constant Maturity j,
$TWAF_{c,j}$	is the Tenor Weight Adjusting Factor for a component c and a Standard Constant Maturity j,
$DCMFP_{c,j,t,t}$	is the Daily Constant Maturity Forward Price, for a component c and for a SCM j calculated at time t and with Contract Proportions taken at time t.
$FX_{ICR,c,t}$	is the Currency exchange rate between the quotation currency of the component instrument and the Index currency reference (ICR) in which the Index is expressed
$IsIn_{c,j,Index}$	a Binary constant with value 1 or 0 to indicate if the component c and SCM j is a member of the CMCI Index being calculated (note if $IsIn_{c,Index}$=0 then all $IsIn_{c,j,Index}$=0),
AT	is the number of Available Tenors for a component c,
$CCYScalar_{ICR,CCY}$	is +1 or –1, with ICR the Index Currency Reference and ccy the quotation Currency of the underlying asset of futures contract.

Further, we simplify notations by introducing XDCMFP as the currency converted DCMFP:

$$XDCMFP_{ICR,c,j,t,d} = DCMFP_{c,j,t,d} \times \left[FX_{ICR,c,t}\right]^{CCYScalar_{ICR,ccy}} \quad (2b)$$

CMCI Benchmark Price Indices are set equal to 1000 on 29 January 2007.

4.2.2 Index continuity maintenance

The CMCI re-weights every year in July, and also rolls into new Target Weights (TWs). Maintenance events (reweighting, rebalancing) trigger each month the recalculation of new Component Nominal Weights (CNWs) for each Standard Constant Maturity. Such CNWs are used in the calculation of the CMCI Benchmark Index. CMCI Benchmark inherits its CNWs from this process and maintains the original integrity of the weights defined at the component level for each SCM in the CMCI.

The CMCI Benchmark also rebalances its forward curve exposure every month. The curve rebalancing mechanism is independent from the Component rebalancing mechanism introduced in the CMCI.

On the day before the start of the Maintenance Period, the CMCI is calculated based on the old CNWs (reflecting old TWs), old TWAFs and old MFs used so far in the calculation.

The first part of the formula is then adjusted for the Maintenance Factor changes, and multiplied by the Curve Value Ratio (CVR) which reflects the change in the Curve Value resulting from the shift from the Old to the New CNWs and TWAFs.

The process also applies to all Maintenance Periods. During Maintenance Periods, the calculation formula for CV is:

$$CV_{ICR,SCM,t,t} = \frac{MF_{ICR,old}}{MF_{ICR,new}}\left[\sum_{c=1,N} RP1_{c,t}\left[\sum_{\mathrm{j=1,AT}} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,j,t,t}\right]\right]$$
$$+\left[\sum_{c=1,N} RP2_{c,t}\left[\sum_{\mathrm{j=1,AT}} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,c,j,t,t}\right]\right], \quad (3)$$

where:

$RP1_{c,t}$ and $RP2_{c,t}$ the rebalancing proportions for component c, at calculation date t (as defined below)

New Maintenance Factors are calculated at the close of business on the CMCI Business Day immediately pre-ceding the first maintenance day, and their values used for subsequent calculations:

$$CVR_{ICR,t,t} = \frac{\sum_{c=1,N}\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,c,SCM,t,t}}{\sum_{c=1,N}\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,SCM,t,t}}, \quad (4)$$

where:

CVR is the Curve Value Ratio. We then obtain:

$$MF_{ICR,new} = \frac{MF_{ICR,old}}{CVR_{ICR,t,t}}, \quad (5)$$

Market Disruption Events are dealt with the procedures set forth in Section 3.6.2.

4.2.3 The Index Curve rebalancing mechanism and the calculation of TWAFs

The CMCI is rebalanced monthly in order to bring the components back into line with their Target Weights. This rebalancing is necessitated by the fact that the CMCI weightings are in part based on the prices of each of the constituent constant maturity forward prices and naturally over-weights the best performing assets and under-weights the worst performing ones. As market prices fluctuate, therefore, the effective weights of the constituent components "drift" from their initial Target Weights. As a result, it is necessary to re-balance the Index periodically to maintain its original weighting.

The same mechanism applies to CMCI Benchmark for the purpose of rebalancing the positions held on each of the respective Standard Constant Maturities or Tenors.

This is accomplished by rebalancing the Individual Tenor Weights (ITW) during each curve Maintenance Period. The process is automatic and is implemented via a pre-defined process. The calculation of the new TWAFs is effected monthly, at the close of business on the business day immediately preceding the first rebalancing day (i.e. the fourth to last business day of the month).

On that day, the new TWAFs are calculated such that the Effective Tenors Weights match the Individual Tenor Weights (ITW) defined for the next period (for curve rebalancing periods), or component Tenor Effective Weights (CTEW) for the current period (for non-curve rebalancing periods).

4.2.4 Calculation of TWAFs for curve rebalancing periods

At the close of business on the day prior to the first maintenance day, using known settlement prices, we solve for TWAFs as the product of the Adjusting Factor (AF) and the Individual Tenor Weights (ITW).

$$TWAF_{ICR,c,j,new} = ITW_{ICR,c,j} \times \mathrm{AF}_{ICR,c,j} \quad (9)$$

where:

AF	as per below in (8)
$ITW_{c,j,new}$	the Individual Tenor Weights defined per component and Standard Constant Maturity.

4.2.5 Calculation of TWAFs for non-curve rebalancing periods

In the case where the curve and price rebalancing frequencies do not remain identical (as a result of an adjustment made to either CMCI or CMCI Benchmark), the new TWAFs would be calculated as per the formula set forth below.

At the close of business on the day prior to the first maintenance day, using known settlement prices, we solve for TWAFs as the product of the Adjusting Factor (AF) and the Component Tenor Effective Weights (CTEW) for all eligible SCM and components in the CMCI Benchmark Composite Index. We have:

$$TWAF_{ICR,c,j,new} = CTEW_{ICR,c,j} \times \mathrm{AF}_{ICR,c,j} \qquad (6)$$

$$CTEW_{ICR,c,j} = \frac{CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,j,t,t}}{\sum_{j=1,AT} CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,j,t,t}}, \qquad (7)$$

$$AF_{ICR,c,j} = \frac{CNW_{c,1,new} \times XDCMFP_{ICR,c,1,t,t}}{CNW_{c,j,new} \times XDCMFP_{ICR,c,j,t,t}}, \qquad (8)$$

where:

CTEW	is the Component Tenor Effective Weight,
$AF_{ICR,c,j}$	the Adjusting Factor for a given commodity Component c and SCM j.

The new TWAFs are solved for all commodity components in the CMCI Benchmark Composite index.

4.3 The CMCI Benchmark - Excess Return Index (CMCIB-ER)

4.3.1. Calculation during non-Maintenance Periods

The CMCI Benchmark Excess Return Index is calculated on each CMCI Business Day and represents the uncollateralized return of the CMCI Benchmark basket over time. The Index has the following expression:

$$\mathrm{CMCIH-ER}_{ICR,t} = \mathrm{CMCIH-ER}_{ICR,t-1} \times \left(1 + IDR_{ICR,t}\right) \qquad (10)$$

with:

$$IDR_{ICR,t} = \frac{CVF}{CVI} - 1 = \frac{\mathrm{CV}_{\mathrm{ICR,t,t\text{-}1}}}{CV_{ICR,t-1,t-1}} - 1 \qquad (11)$$

$$CVI = CV_{ICR,t-1,t-1} = \sum_{c=1,N} \left[\sum_{j=1,AT} IsIn_{c,j,Index} \times CNW_{c,j,SCM} \times TWAF_{c,j} \times XDCMFP_{ICR,c,j,t-1,t-1} \right] \qquad (12)$$

$$CVF = CV_{ICR,t,t-1} = \sum_{c=1,N} \left[\sum_{j,1,AT} IsIn_{c,j,Index} \times CNW_{c,j,SCM} \times TWAF_{c,j} \times XDCMFP_{ICR,c,j,t,t-1} \right] \qquad (13)$$

where:

$IDR_{ICR,t}$	is the Index Daily Return, for a specified Currency reference (ICR) at time t.
CVF	is the Curve Value Final, calculated for an Index currency reference ICR, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference

calculation time t-1,

CVI — is the Curve Value Initial, calculated for an Index currency reference ICR, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,

$XDCMFP_{ICR,c,j,t,t-1}$ — is the Currency translated Daily Constant Maturity Forward Price, calculated for an Index currency reference ICR, for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1.

$IsIn_{c,j,Index}$ — a Binary constant with value 1 or 0 to indicate if the component c and the SCM j is a member of the Index being calculated.

CMCI Benchmark Excess Return Indices are set equal to 1000 on 29 January 2007.

4.3.2. Calculation during Maintenance Periods

The Index Daily Return is defined as the percentage change in the CV of the CMCI Benchmark from one CMCI Business Day to the next. It reflects the return that would have been realised by holding positions in the basket of Daily constant Maturity Forward Price (DCMFP) to reflect each CNWs and TWAFs (or TWs and ITWs), from the closing of the trading platform on the prior CMCI Business Day to the closing of the trading platform on the next CMCI Business Day.

The daily Rebalancing Proportions (RP) used to calculate CVI and CVF are identical to those used to calculate the CMCI Benchmark Price Index on the CMCI Business Day immediately preceding the calculation date.

During a standard rebalancing period from the first to the last CMCI Business Day of the rebalancing period we have:

$$CVI_{ICR,t-1,t-1} = \frac{MF_{ICR,old}}{MF_{ICR,new}} \times \left[\sum_{c=1,N} RP1_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,j,c,t-1,t-1} \right] \right] + \sum_{c=1,N} RP2_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,j,c,t-1,t-1} \right] \quad (14)$$

and

$$CVF_{ICR,t-1,t-1} = \frac{MF_{ICR,old}}{MF_{ICR,new}} \times \left[\sum_{c=1,N} RP1_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,j,c,t,t-1} \right] \right] + \sum_{c=1,N} RP2_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,j,c,t,t-1} \right] \quad (15)$$

where:

RP1 and RP2 — are the rebalancing proportions for component c, at calculation date t (as defined in Section 1.3), and can take the following values

$RP1_{c,t} = \{1.0, 2/3, 1/3, 0.0\}$, $RP2_{c,t} = 1 - RP1_{c,t} = \{0.0, 1/3, 2/3, 1.0\}$

4.4 The CMCI Benchmark – Total Return Index (CMCIB-TR)

4.4.1. Calculation of the Total Return Index

The CMCI Benchmark Total Return Index is derived from the CMCI Benchmark Excess Return Index. In addition to uncollateralized returns generated from the CMCI Benchmark basket, a daily fixed income return is added and the Index value takes the following expression:

$$\text{CMCIH} - \text{TR}_{ICR,t} = \text{CMCIH} - \text{TR}_{ICR,t-1} \times DITRF_{ICR,t}$$

where:

$$DITRF_{ICR,t} = \left(1 + IDR_{ICR,t} + IRR_{ICR,t}\right) \qquad (17)$$

IRR, DRR, ARRA & ARRS, and calcdays are defined in Section 3.4.1.

The fixed income return component of the Total Return Index reflects the interest earned on securities theoretically deposited as margin for hypothetical positions in the contracts comprising the Index.

CMCI Benchmark Total Return Indices are set equal to 1000 on 29 January 2007.

Appendix

A. **Foreign Exchange Conversion Methodology**
B. **Details of Calculations and Assumptions**
C. **Index re-balancing mechanism: detailed computations**
D. **List of calculated indices in the CMCI Index Family**
E. **Details of Calculations and Assumptions for CMCI Benchmark Indices**

A. Foreign Exchange Conversion Methodology

Table A below provides the CMCI Foreign Exchange price/rate sources as well as cross rate reference calculations. The CCY Exchange Rate source is set to Bloomberg BFIX Rate on page CCY F143 Curncy HP GO> (Note the Location Time zone is set to "New-York"). CCY F143 Curncy HP <GO>, states that the Fixing prices are captured at 2:30pm EST.

BISL recommends that the preferred reference price used is the Bloomberg BFIX Fixing Rates (CCY F143) rather than the default closing price found on HP. This is for the following reasons:

- BFIX rates are available every 30 minutes on every major currency pair, so that the fixing time can be chosen to suit the index
- BFIX rates are published within 20 seconds of the fixing time, whereas closing prices can take up to several hours to be published on the system
- BFIX rates are fixed and not subject to post-publishing correction, again unlike closing prices
- BFIX rates are based on BISL's highest-quality data source (the Bloomberg Generic, known as the 'BGN') which itself is a composite of BISL's highest-quality contributor sources. BISL does not publish which exact contributor prices are used in the BGN or their exact blending algorithm which defends the BGN from manipulation
- The BFIX rates are constructed from a short-interval time-weighted average of several BGN price ticks, which further insulates the BFIX rate from any spurious ticks
- The BFIX rates can be very easily accessed in the HP function, in essentially the same way that a user could access closing prices

TABLE A. DEFINITION CCY EXCHANGE RATES, CCY SCALARS DEFINITIONS, AND CROSS RATES CALCULATIONS.

ICR	CCY	CCY Pair	Quotation	$CCYScalar_{IC_{R,CCY}}$	Rate Source
USD	**USD**			1	
	AUD[6]	**AUD-USD**	USD per AUD	1	BB: AUD F143 Curncy HP <GO>
	EUR	**EUR-USD**	USD per EUR	1	BB: EUR F143 Curncy HP <GO>
	CAD[7]	**USD-CAD**	CAD per USD	-1	BB: CAD F143 Curncy HP <GO>
	CHF	**USD-CHF**	CHF per USD	-1	BB: CHF F143 Curncy HP <GO>
	GBP	**GBP-USD**	USD per GBP	1	BB: GBP F143 Curncy HP <GO>
	JPY	**USD-JPY**	JPY per USD	-1	BB: JPY F143 Curncy HP <GO>
EUR	**EUR**			1	
	AUD	**AUD-EUR**	AUD per EUR	-1	EUR-USD / AUD-USD
	USD	**EUR-USD**	USD per EUR	-1	BB: EUR F143 Curncy HP <GO>
	CAD	**EUR-CAD**	CAD per EUR	-1	USD-CAD x EUR-USD
	CHF	**EUR-CHF**	CHF per EUR	-1	USD-CHF x EUR-USD
	GBP	**GBP-EUR**	EUR per GBP	1	GBP-USD / EUR-USD
	JPY	**EUR-JPY**	JPY per EUR	1	USD-JPY x EUR-USD
GBP	**GBP**			1	
	AUD	**AUD-GBP**	AUD per GBP	-1	GBP-USD / AUD-USD
	USD	**GBP-USD**	USD per GBP	-1	BB: GBP F143 Curncy HP <GO>
	CAD	**GBP-CAD**	CAD per GBP	-1	USD-CAD x GBP-USD
	CHF	**GBP-CHF**	CHF per GBP	-1	USD-CHF x GBP-USD
	EUR	**GBP-EUR**	EUR per GBP	1	GBP-USD / EUR-USD
	JPY	**GBP-JPY**	JPY per GBP	1	GBP-USD x USD-JPY
CHF	**CHF**			1	
	USD	**USD-CHF**	CHF per USD	1	BB: CHF F143 Curncy HP <GO>
	AUD	**AUD-CHF**	CHF per AUD	1	USD-CHF x AUD-USD
	EUR	**EUR-CHF**	CHF per EUR	1	USD-CHF x EUR-USD
	CAD	**CAD-CHF**	CHF per CAD	1	USD-CHF / USD-CAD
	GBP	**GBP-CHF**	CHF per GBP	1	GBP-USD x USD-CHF
	JPY	**CHF-JPY**	JPY per CHF	1	USD-JPY / USD-CHF
CAD	**CAD**			1	
	USD	**USD-CAD**	CAD per USD	1	BB: CAD F143 Curncy HP <GO>
	EUR	**EUR-CAD**	CAD per EUR	1	USD-CAD x EUR-USD
	CHF	**CAD-CHF**	CHF per CAD	-1	USD-CHF / USD-CAD
	GBP	**GBP-CAD**	CAD per GBP	1	GBP-USD x USD-CAD
	JPY	**CAD-JPY**	JPY per CAD	1	USD-JPY / USD-CAD
AUD	**AUD**			1	
	USD	**AUD-USD**	USD per AUD	- 1	BB: AUD F143 Curncy HP <GO>
	CHF	**AUD-CHF**	CHF per AUD	- 1	USD-CHF x AUD-USD
	EUR	**AUD-EUR**	EUR per AUD	- 1	AUD-USD / EUR-USD
	GBP	**GBP-AUD**	AUD per GBP	1	GBP-USD / AUD-USD
	JPY	**AUD-JPY**	JPY per AUD	1	USD-JPY x AUD-USD
JPY	**JPY**				
	USD	**USD-JPY**	JPY per USD	1	BB: JPY F143 Curncy HP <GO>
	AUD	**AUD-JPY**	JPY per AUD	1	USD-JPY x AUD-USD
	EUR	**EUR-JPY**	JPY per EUR	1	USD-JPY x EUR-USD
	CAD	**CAD-JPY**	JPY per CAD	1	USD-JPY / USD-CAD
	CHF	**CHF-JPY**	JPY per CHF	1	USD-JPY / USD-CHF
	GBP	**GBP-EUR**	EUR per GBP	1	GBP-USD / EUR-USD

Source: UBS, Bloomberg

From Section 3.2.1., form (4), we know the generic expression for any Index Currency Reference (ICR).

$$CMCI - PI_{USD,SCM,t} = MF_{SCM,USD} \times \sum_{c=1,N} DCV_{c,USD,SCM,t,t} = MF_{SCM,USD} \times BV_{USD,SCM,t,t} \quad (4)$$

where:

$$\mathrm{DCV}_{c,\mathrm{USD},\mathrm{SCM},t,t} = \mathrm{IsIn}_{c,\mathrm{Index}} \times \mathrm{DCMFP}_{c,\mathrm{SCM},t,t} \times \mathrm{CNW}_{c,\mathrm{SCM}} \times \left[\mathrm{FX}_{\mathrm{USD},c,t}\right]^{\mathrm{CCYScalar}_{\mathrm{USD},\,ccy}} \quad (5)$$

[6]: Australian Dollar
[7]: Canadian Dollar

If ICR is EUR, a JPY component will be using the following conversion:

$$DCV_{c,EUR,SCM,t,t} = IsIn_{c,Index} \times DCMFP_{c,SCM,t,t} \times CNW_{c,SCM} \times \left[\left(USD - JPY \times EUR - USD\right)_t\right]^{(-1)}$$

B. Details of Calculations and Assumptions

B.1. Calculation of the Daily Constant Maturity Date

For the determination of the exact forward date we use the expression:

DCMD SCM t = t + pd

Where:

t — is a CMCI Business Day (as defined in section 1.3.1) pd denotes the tenor period in days:

If SCM=3M then pd = 91 days, if SCM=6M then pd = 182 days, if SCM=1Y then pd = 365 days, if SCM=2Y then pd = 730 days, if SCM=3Y then pd = 1095 days, if SCM=4Y then pd = 1460 days, if SCM=5Y then pd = 1825 days)

B.2. Further details on the calculation of the Daily Constant Maturity Forward Price (DCMFP)

For a given SCM, the Daily Constant Maturity Forward Price of a specific component c, takes the following expression:

$$DCMFP_{c,SCM,t,d} = DCNP1_{c,t} \times CP1_{c,SCM,d} + DCNP2_{c,t} \times CP2_{c,SCM,d} \qquad (3)$$

where:

c — denotes component commodity c,

t — is the calculation date (by definition, a CMCI Business Day),

d — is the reference date for which contract proportions are calculated. For the Price index, d is equal to t. For the Excess return index, d is equal to t-1

and, for a component c, a Standard Constant Maturity SCM and a calculation date t:

$DCNP1_{c,t}$ — is the Daily Contract Nearby Price, that is to say the Forward or Futures Contract price associated with the futures contract whose MDP date is equal or immediately preceding the Daily Constant Maturity Date (related to the specified Standard Constant Maturity or Constant Maturity Boundary), as defined by the Eligible Nearby Contract table

$DCNP2_{c,t}$ — is the Daily Contract Nearby Price, that is to say the Forward or Futures Contract price associated with the futures contract whose MDP date is immediately following the Daily Constant Maturity Date (related to the specified Standard Constant Maturity or Constant Maturity Boundary), as defined by the Eligible Nearby Contract table.

When, for a specific component, the Standard Constant Maturity tenor is limited by a Constant Maturity boundary (CMB), the definition of the Constant Maturity Forward Price is simply amended using CMB instead of SCM.

B.3. Calculation of the CMCI in the particular case of a changes in MDPs

Should any parameter of a futures contract be changed by the relevant exchange, or should the Index Administrator change the MDP rule (by changing the naMDP, introducing a new MDPa or changing/removing an existing MDPa) a discontinuity in the Index could arise.

In any of the above cases the Index mechanism avoids such discontinuity by allowing the new parameter or parameters to be introduced over the course of a designated appropriate Maintenance Period. We substitute form (8) and calculate the Basket Value as per the following formula (8b) below:

$$BV_{ICR,t} = MF_{ICR,old,OLD-MDP} / MF_{ICR,new,NEW-MDP} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,old,OLD-MDP} \times RP1_{c,t} \times DCMFP_{c,SCM,t,t,OLD-MDP} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}} \right] + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,new,NEW-MDP} \times RP2_{c,t} \times DCMFP_{c,SCM,t,t,NEW-MDP} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}} , \quad (8b)$$

where:

$RP1_{c,t}$ and $RP2_{c,t}$ the rebalancing proportions for component c, at calculation date t (as defined in Section 1.3. Summary of key index terms and in section 3.2.2. Index continuity maintenance).

New Maintenance Factors are calculated at the close of business on the CMCI Business Day immediately preceding the first maintenance day, and their values used for subsequent calculations:

$$BVR_{ICR,t} = \frac{\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,new,NEW-MDP} \times DCMFP_{c,SCM,t,t,NEW-MDP} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}}}{\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,old,OLD-MDP} \times DCMFP_{c,SCM,t,t,OLD-MDP} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}}}, \quad (9b)$$

Where BVR is the Basket Value Ratio. We then obtain:

$$MF_{ICR,new} = \frac{MF_{ICR,old}}{BVR_{ICR,t}}, \quad (10b)$$

The procedure described above is theoretically valid for any change of parameters affecting the level of the DCMFP.

C. Index rebalancing Mechanism: detailed calculations

For each commodity in the CMCI composite index ("c" being the mute counter index), we require:

$$\frac{CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}}}{\sum_{c=1,N} CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}}} - TW_{c,\%} = 0$$

For notation purposes, one introduces currency denominated quantities:

$$DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}} = XDCMFP_{ICR,c,SCM,t,t} = XDCMFP_c$$

Then for each of the N commodities in the Index, one can rewrite the previous equation as:

$$(1 - TW_c)\, XDCMFP_c \cdot CNW_{c,SCM,new} - (TW_1 \cdot XDCMFP_1 \cdot CNW_{1,SCM,new} + \Lambda + TW_{c-1} XDCNMFP_{c-1} \cdot CNW_{c-1,SCM,new}) - (TW_{c+1} \cdot XDCMFP_{c+1} \cdot CNW_{c+1,SCM,new} + \Lambda + TW_N XDCMFP_N \cdot CNW_{N,SCM,new}) = 0$$

We thus obtain a system
- of N linear equations
- with N unknowns (i.e.) $\left(CNW_{c,SCM,new}\right)_{1 \le c \le N}$

This system can be expressed as the following matrix equation:

$$\begin{bmatrix} (1-TW_1) & -TW_1 & \Lambda & -TW_1 \\ -TW_2 & (1-TW_2) & \Lambda & -TW_2 \\ & & & \\ -TW_N & & -TW_N & (1-TW_N) \end{bmatrix} \begin{pmatrix} XDCMFP_1 \times CNW_{1,SCM,new} \\ : \\ : \\ XDCMFP_N \times CNW_{N,SCM,new} \end{pmatrix} = 0$$

If one further defines:

the matrix $M = \begin{bmatrix} TW_1 & TW_1 & \Lambda & TW_1 \\ TW_2 & TW_2 & \Lambda & TW_2 \\ : & : & & : \\ TW_N & \ldots & TW_N & TW_N \end{bmatrix}$

and the vector $z = \begin{pmatrix} XDCMFP_1 \times CNW_{1,SCM,new} \\ : \\ : \\ XDCMFP_N \times CNW_{N,SCM,new} \end{pmatrix}$,

it all comes down to:

$Mz = z$

which amounts to finding an eigenvector associated to eigenvalue 1 for M. Note M obviously has rank 1 and is a projection on the line generated by z (in the vector space sense).

Any component z_i belonging to any such given eigenvector z would then satisfy:

$$TW_i\left(\sum_{k=1}^{N} z_k\right) = z_i$$

implying that:

$$\left(\sum_{k=1}^{N} z_k\right) = \frac{z_i}{TW_i} = \frac{z_j}{TW_j}\ ,\ \forall i, j\ ,\ 1 \le i, j \le N$$

Note the left hand side of the equation doesn't depend on i or j.

On the other hand, the vector from the initial equation has to satisfy this relationship since all eigenvectors do. This reads:

$$\frac{XDCMFP_i}{TW_i} CNW_{i,SCM,new} = \frac{XDCMFP_j}{TW_j} CNW_{j,SCM,new},\ \forall i, j\ ,\ 1 \le i, j \le N$$

To find a unique solution (as opposed to a line of solutions) one has to fix one end of the inputs, hence the use of x. If one decides (without loss of generality) to set:

$$CNW_{N,SCM,new} = x$$

Then the corresponding unique solution satisfying the previous constraint is given by:

$$\frac{XDCMFP_i}{TW_i} CNW_{i,SCM,new} = \frac{XDCMFP_j}{TW_j} CNW_{j,SCM,new},\ \forall i, j\ ,\ 1 \le i, j \le N$$

D. List of calculated indices in the CMCI Index Family

D.1. Core CMCI Indices

The CMCI, its sectors and its component indices are calculated for the following Standard Constant Maturities (SCM):

- 3 Months (3M),
- 6 Months (6M),
- 1 Year (1Y),
- 2 Years (2Y)),
- 3 Years (3Y),

We also provide single component indices for the following Standard Constant Maturities for specific commodities only:

- 4 Years (4Y),
- 5 Years (5Y).

All of the Core CMCI Indices can be made available in currency-hedged format.

The list of CMCI indices is provided in table I.1, while the index composition is provided in table below.

TABLE D1. CMCI INDICES

CMCI Index	Code	Index Ticker	3M	6M	1Y	2Y	3Y	4Y	5Y
CMCI Composite	CI	CMCI	Yes	Yes	Yes	Yes	Yes	-	-
CMCI High Energy	HE	CMHE	Yes	Yes	Yes	Yes	Yes	-	-
CMCI ex-Lean Hogs	XL	CMXL	Yes	Yes	Yes	Yes	Yes	-	-
CMCI Food Index	FO	CMFO	Yes	Yes	Yes	-	-	-	-
CMCI Energy	EN	CMEN	Yes	Yes	Yes	Yes	Yes	-	-
CMCI Industrial Metals	IM	CMIM	Yes	Yes	Yes	Yes	Yes	-	-
CMCI Precious Metals	PM	CMPM	Yes	Yes	Yes	Yes	Yes	-	-
CMCI Agriculture	AG	CMAG	Yes	Yes	Yes	-	-	-	-
CMCI Livestock	LV	CMLV	Yes	Yes	-	-	-	-	-
CMCI WTI Crude Oil	WC	CTWC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CMCI Brent Crude Oil	CO	CTCO	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CMCI ULS Diesel	HO	CTHO	Yes	Yes	Yes	-	-	-	-
CMCI Gasoil	QS	CTQS	Yes	Yes	Yes	-	-	-	-
CMCI RBOB Gasoline	XB	CTXB	Yes	Yes	-	-	-	-	-
CMCI Natural Gas	NG	CTNG	Yes	Yes	Yes	Yes	Yes	-	-
CMCI LME Copper	LP	CTLP	Yes	Yes	Yes	Yes	Yes	Yes	-
CMCI High Grade Copper	HG	CTHG	Yes	Yes	-	-	-	-	-
CMCI LME Zinc	LX	CTLX	Yes	Yes	Yes	-	-	-	-
CMCI LME Aluminium	LA	CTLA	Yes	Yes	Yes	Yes	Yes	Yes	-
CMCI LME Nickel	LN	CTLN	Yes	Yes	Yes	-	-	-	-
CMCI LME Lead	LL	CTLL	Yes	Yes	Yes	-	-	-	-
CMCI Gold	GC	CTGC	Yes	Yes	Yes	Yes	-	-	-
CMCI Silver	SI	CTSI	Yes	Yes	Yes	Yes	-	-	-
CMCI Wheat	WW	CTWW	Yes	Yes	Yes	-	-	-	-
CMCI HRW Wheat	KW	CTKW	Yes						
CMCI Corn	CN	CTCN	Yes	Yes	Yes	-	-	-	-
CMCI Soybeans	SY	CTSY	Yes	Yes	Yes	-	-	-	-
CMCI Soybean Meal	SM	CTSM	Yes	Yes	-	-	-	-	-
CMCI Soybean Oil	BO	CTBO	Yes	Yes	-	-	-	-	-
CMCI Sugar No.11	SB	CTSB	Yes	Yes	Yes	-	-	-	-
CMCI Sugar #5	QW	CTQW	Yes	Yes	-	-	-	-	-
CMCI Coffee "C"	KC	CTKC	Yes	Yes	Yes	-	-	-	-
CMCI Cotton No.2	CT	CTCT	Yes	Yes	-	-	-	-	-
CMCI Live Cattle	LC	CTLC	Yes	Yes	-	-	-	-	-
CMCI Lean Hogs	LH	CTLH	Yes	Yes	-	-	-	-	-

Source: UBS, Bloomberg
Legend: Yes: Index is quoted

TABLE D.2. CMCI INDICES COMPOSITION

CMCI Index Composition	Index Ticker	CL	EN	CO	HO	QS	RB	NG	LP	HG	LX	LA	LN	LX	GC	SI
CMCI Composite	CMCI	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CMCI High Energy	CMHE	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CMCI ex-Lean Hogs	CMXL	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CMCI Food index	CMFO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub Indices																
CMCI Energy	CMEN	Y	-	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-
CMCI Industrial Metals	CMIM	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	-	-
CMCI Precious Metals	CMPM	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
CMCI Agriculture	CMAG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Livestock	CMLV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Single Component Indices																
CMCI WTI Crude Oil	CTWC	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Brent Crude Oil	CTCO	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	-
CMCI ULS Diesel	CTHO	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-
CMCI Low Sulfur Gasoil	CTQS	-	-	-	-	Y	-	-	-	-	-	-	-	-	-	-
CMCI RBOB Gasoline	CTXB	-	-	-	-	-	Y	-	-	-	-	-	-	-	-	-
CMCI Natural Gas	CTNG	-	-	-	-	-	-	Y	-	-	-	-	-	-	-	-
CMCI LME Copper	CTLP	-	-	-	-	-	-	-	Y	-	-	-	-	-	-	-
CMCI High Grade Copper	CTHG	-	-	-	-	-	-	-	-	Y	-	-	-	-	-	-
CMCI LME Zinc	CTLX	-	-	-	-	-	-	-	-	-	Y	-	-	-	-	-
CMCI LME Aluminium	CTLA	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
CMCI LME Nickel	CTLN	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-
CMCI LME Lead	CTLL	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-
CMCI Gold	CTGC	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-
CMCI Silver	CTSI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y
CMCI Wheat	CTWW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Corn	CTCN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Soybeans	CTSY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Soybean Meal	CTSM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Soybean Oil	CTBO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Sugar No.11	CTSB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Sugar #5	CTQW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Cocoa	CTQC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Coffee "C"	CTKC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Cotton No.2	CTCT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Live Cattle	CTLC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Lean Hogs	CTLH	-	-	-	-	-	-	-	-		-	-	-	-	-	-

Source: UBS, Bloomberg
Legend: Y: Component is included, -: Component is not included.

TABLE D.2. CMCI INDICES COMPOSITION (CONTINUED)

CMCI Index Composition	Index Ticker	W	C	S	SM	BO	SB	QW	QC	KC	CT	LC	LH
CMCI Composite	CMCI	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CMCI High Energy	CMHE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CMCI ex-Lean Hogs	CMXL	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-
CMCI Food Index	CMFO	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	Y	Y
Sub Indices													
CMCI Energy	CMEN	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Industrial Metals	CMIM	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Precious Metals	CMPM	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Agriculture	CMAG	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-
CMCI Livestock	CMLV	-	-	-	-	-	-	-	-	-	-	Y	Y
Single Component Indices													
CMCI WTI Crude Oil	CTWC	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Brent Crude Oil	CTCO	-	-	-	-	-	-	-	-	-	-	-	-
CMCI ULS Diesel	CTHO	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Low Sulfur Gasoil	CTQS	-	-	-	-	-	-	-	-	-	-	-	-
CMCI RBOB Gasoline	CTXB	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Natural Gas	CTNG	-	-	-	-	-	-	-	-	-	-	-	-
CMCI LME Copper	CTLP	-	-	-	-	-	-	-	-	-	-	-	-
CMCI LME Zinc	CTLX	-	-	-	-	-	-	-	-	-	-	-	-
CMCI LME Aluminium	CTLA	-	-	-	-	-	-	-	-	-	-	-	-
CMCI LME Nickel	CTLN	-	-	-	-	-	-	-	-	-	-	-	-
CMCI LME Lead	CTLL	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Gold	CTGC	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Silver	CTSI	-	-	-	-	-	-	-	-	-	-	-	-
CMCI Wheat	CTWW	Y	-	-	-	-	-	-	-	-	-	-	-
CMCI Corn	CTCN	-	Y	-	-	-	-	-	-	-	-	-	-
CMCI Soybeans	CTSY	-	-	Y	-	-	-	-	-	-	-	-	-
CMCI Soybean Meal	CTSM	-	-	-	Y	-	-	-	-	-	-	-	-
CMCI Soybean Oil	CTBO	-	-	-	-	Y	-	-	-	-	-	-	-
CMCI Sugar No.11	CTSB	-	-	-	-	-	Y	-	-	-	-	-	-
CMCI Sugar #5	CTQW	-	-	-	-	-	-	Y	-	-	-	-	-
CMCI Cocoa	CTQC	-	-	-	-	-	-	-	Y	-	-	-	-
CMCI Coffee "C"	CTKC	-	-	-	-	-	-	-	-	Y	-	-	-
CMCI Cotton No.2	CTCT	-	-	-	-	-	-	-	-	-	Y	-	-
CMCI Live Cattle	CTLC	-	-	-	-	-	-	-	-	-	-	Y	-
CMCI Lean Hogs	CTLH	-	-	-	-	-	-	-	-	-	-	-	Y

Source: UBS, Bloomberg
Legend: Y: Component is included, -: Component is not included.

In addition to above CMCI Indices, the Index Administrator and UBS created a number of additional CMCI Component Indices for commodities we see significant demand for, but which do not pass index membership criteria. These are listed in the table below.

TABLE D.3 INTRODUCING NEW COMPONENT INDICES

Contract	Code Reuters	Code Bloomberg	Index Ticker	3M	6M	1Y	2Y	3Y	4Y	5Y
Canola	RS	RS	CTRS	Yes	-	-	-	-	-	-
Barley	AB	WA	CTWA	Yes	-	-	-	-	-	-

Lumber (Random Length)	LB	LB	CTLB	Yes	-	-	-	-	-	-
Rough Rice	RR	RR	CTRR	Yes	-	-	-	-	-	-
Rapeseed	COM	IJ	CTCZ	Yes	-	-	-	-	-	-
Platinum	PL	PL	CTPL	Yes	-	-	-	-	-	-
F.C .Orange Juice (FCOJ)	OJ	JO	CTJO	Yes	-	-	-	-	-	-
Feeder Cattle	FC	FC	CTFC	Yes	-	-	-	-	-	-
Cocoa		QC	CTQC	Yes	-	-	-	-	-	-

Source: UBS, Bloomberg
Legend: Yes: Index is Quoted

CMCI Benchmark indices combine all the available Tenors for composite, sector or individual commodity component.

D.2. CMCI Strategy Indices

In addition to the CMCI Core Indices, the Index Administrator and UBS created a number of additional CMCI Strategy Indices that fall within the categories of CMCI Active, CMCI Flex and CMCI Essence.

All of the CMCI Strategy Indices can be made available in currency-hedged format.

The Total Return version of the CMCI Strategy indices will use the same Available Reference Rates as the CMCI Core indices.

D.2.1. CMCI Flex Indices

While the UBS Bloomberg CMCI is an innovative index that has introduced two unique concepts to commodity index investment – constant maturity and diversification across the commodity futures curve, the S&P GSCI (further referred to as SPGSCI) and the Bloomberg Commodity IndexSM (further referred to as BCOM) have historically been the most widely used commodity indices.

CMCI Flex indices combine features from both indices. It uses the exact commodity weights and rebalancing methodology of the SPGSCI or BCOM, but instead of rolling front month futures, CMCI Flex indices use the forward tenors, daily rolling and constant maturity methodology of the CMCI. This combination provides a unique balance between the widely followed, SPGSCI or BCOM indices and the benefits of diversification across maturities and rolling methodology provided by the UBS Bloomberg CMCI. The constant maturity approach and longer maturities that the UBS Bloomberg CMCI brings to the CMCI Flex indices may lead to lower volatility and mitigation of negative roll yield while still keeping pace during periods of backwardation.

CMCI Flex indices combining CMCI methodology with BCOM weights are called UBS Bloomberg BCOM Constant Maturity Index (see Schedule 1 section for further information).

CMCI Flex indices combining CMCI methodology with SPGSCI weights are called UBS Bloomberg SPGSCI Constant Maturity Index (see Schedule 2 section for further information).

CMCI Flex indices can be made available on any composite, sector or commodity component.

D.2.2. CMCI Adjusted Energy Indices

The CMCI Indices and CMCI Flex Indices are also available with over or under-weight allocations applied to energy sector commodities. The adjusted weighting scheme is implemented by applying an Energy Multiplier to the CNWs of the energy sector commodities, WTI Crude Oil, Brent Crude Oil, ULS Diesel, RBOB Gasoline, Gasoil and Natural Gas. A Non-Energy Multiplier is applied to the CNWs of all other commodities but the TWAFs remain unadjusted for all commodities. The calculation of the indices otherwise follows the methodology laid out in sections 3 and 4.

Currently 9 such indices are offered, for which the applicable Energy and Non-Energy Multipliers are listed below:

Index Name	Energy Multiplier	Non-Energy Multiplier
UBS Bloomberg CMCI High Energy Index	2	0.5
UBS Bloomberg CMCI 3 Month High Energy Index	2	0.5

UBS Bloomberg CMCI 6 Month High Energy Index	2	0.5
UBS Bloomberg CMCI 1 Year High Energy Index	2	0.5
UBS Bloomberg CMCI 2 Year High Energy Index	2	0.5
UBS Bloomberg CMCI 3 Year High Energy Index	2	0.5
UBS Bloomberg SPGSCI CMCI Reduced Energy Index	0.5	1
UBS Bloomberg SPGSCI CMCI Light Energy Index	0.25	1
UBS Bloomberg SPGSCI CMCI Ultra Light Energy Index	0.125	1

D.2.3. CMCI Essence

CMCI Essence indices are diversified market neutral commodity strategies, aiming to generate alpha from commodity markets by benefiting from the different investment methodologies of the CMCI and the traditional commodity indices. The long leg of the strategy will typically be the CMCI Flex index and the short leg of the strategy will be the traditional index that the CMCI Flex index is derived from. CMCI Essence indices are rebalanced quarterly.

CMCI Essence indices can be made available on any composite, sector or commodity component.

CMCI Essence T10 is one of the indices in the CMCI Essence family.

D.2.4. UCITS Compliant CMCI Agriculture Index (CMAGU)

The UCITS Compliant CMCI Agriculture Index is composed only of commodities within the agriculture sector of and applies the 35/20 allocation capping rules detailed below.

The target weight of each relevant component in the Index will be subject to weight capping specified by the 35/20 rules. To provide a buffer for weight changes during the course of the month and decrease the likelihood of a breach of the 35/20 rules allocation limits, the target weight caps will be set to 30/18. It uses the exact commodity weights and monthly rebalancing methodology of the CMCI. For each component, it uses the same forward tenors, daily rolling and constant maturity methodology of the CMCI.

The CMCI Agriculture UCITS Index is composed solely of agricultural commodities. Commodities with enough similarity and historical correlation must be treated as a single component during the capping process. The Soybean component consists of Soybeans, Soybean Oil, and Soybean Meal; the Wheat component consists of Wheat, Hard Red Winter Wheat, and Milling Wheat, the Cocoa component includes Cocoa (US) and London Cocoa; and the Sugar component consists of Sugar No.11 and White Sugar. The procedure and mechanism to apply the 35/20 rule follows these steps:

Step 1: On the annual target weight rebalance days, the new target weights are extracted for each commodity from the CMCI index.

Step 2: All components are reviewed. If any component group (Soybean, Wheat, or Sugar) has a weight above 30%, the individual components are reduced proportionally such that the group is exactly 30%. If an individual component has a weight above 30%, then it is reduced to exactly 30%. The total weight reduced is distributed proportionally among the remaining components.

Step 3: No remaining component's weight can exceed 20%.
If the weight of any component not reviewed in Step 2 is above 20%, it is capped at 18% with the excess weight redistributed proportionally among all remaining components that have not already been reviewed. This process is iterative until the weights of all remaining components is less than or equal to 20%

Rounding: Final target weights are rounded to 4 decimal point precision. If the sum of the target weights due to the rounding is slightly in excess of 100%, the largest single component weight is reduced by the excess weight. If the sum of the weights due to the rounding is slightly below 100%, the difference is added to the smallest weighted component.

D.2.5. CMCI Ex-Agriculture Ex-Livestock Indices (CMCI xAL)

CMCI Ex-Agriculture Ex-Livestock Indices (CMCI xAL) use the exact commodity weights and monthly rebalancing methodology of the CMCI, but exclude all components from the agriculture sector and the livestock sector. On a component basis, it uses the same ITWs as are used under the CMCI and also uses the same forward tenors, daily rolling and constant maturity methodology of the CMCI.

For each of the CMCI Ex-Agriculture Ex-Livestock Indices, the Index Administrator calculates and publishes an Excess Return version and a Total Return version. The calculation follows the same methodology and uses the same formulae as the CMCI Excess Return and Total Return as detailed in Sections 3.3 The CMCI Excess Return (CMCI-ER) and 3.4 The CMCI Total Return (CMCI-TR) of this manual.

CMCI Currency Hedged indices aim to facilitate CMCI investment in currencies other than the US Dollar. Currency Hedged Excess Return and Total Return versions of the CMCI xAL Indices are calculated using the same formula as detailed in Section 3.5. The CMCI Currency Hedged Indices (XMCI) of this manual.

D.3.5.1. CMCI Ex-Agriculture Ex-Livestock Capped Index

The CMCI Ex-Agriculture Ex-Livestock Capped Index is based on the CMCI Ex-Agriculture Ex-Livestock Index except that it applies the 35/20 allocation capping rules detailed below (the "35/20 Rules"), such that no single component comprises more than 35% of the index and only one component may comprise more than 20% of the index. To provide a buffer for weight changes during the course of the month and decrease the likelihood of a breach of the 35/20 Rules, the target weight caps will be set to 30%/18%.

The CMCI Ex-Agriculture Ex-Livestock Capped Index consists of energy and metals commodities. Five of these commodities as of H2-2015 form the petroleum component ("Petroleum Component") which due to their similarity (derived from crude oil) and historical correlation must be treated as sub categories of a single component during the capping process. The five petroleum commodities are NYMEX-listed WTI Crude Oil , ICE-listed WTI Crude Oil, Brent Crude Oil, RBOB Gasoline and ULS Diesel.

The procedure and mechanism to apply the 35/20 Rules follows these steps:

Step 1: On the annual target weight rebalance days, the new target weights are extracted for each commodity from the CMCI index.

Step 2: The Petroleum Component is reviewed. If its target weight is above 30% of the index, the individual components are reduced proportionally such that the Petroleum Component is exactly 30%. The total target weight reduced is distributed proportionally among the remaining non-Petroleum components.

Step 3: No remaining component's weight can exceed 18% of the index.
If the weight of any component not reviewed in Step 2 is above 18%, it is capped at 18% with the excess weight redistributed proportionally among all remaining components that have not already been reviewed. This process is iterative until the weights of all remaining components is less than or equal to 18%

Rounding: Final target weights are rounded to 6 decimal point precision. If the sum of the target weights due to the rounding is slightly in excess of 100%, the largest single component weight is reduced by the excess weight. If the sum of the weights due to the rounding is slightly below 100%, the difference is added to the smallest weighted component.

The CMCI XAL Website: the CMCI XAL page is accessible on the CMCI Website via the following link;

https://www.ubs.com/global/en/investment-bank/bloomberg-cmci/universe/composite-index/cmci-xal.html

D.2.6. Monthly Currency Hedged CMCI Indices

CMCI Currency Hedged indices aim to facilitate CMCI investment in currencies (each a "Hedged Currency") other than the US Dollar. Currency Hedged Excess Return and Total Return are calculated using the formulae detailed below. As these indices are currency hedged each month, the returns of the indices are exposed to the movements of the Hedged Currency spot rate relative to the US dollar between Rebalance Days.

On 31 January 2011 (the "Inception Date"), the index level is 1000.000. On any CMCI Business Day (t), the index is

$$I_t = I_n \frac{FX_t}{FX_n} \frac{S_t}{S_n} - I_{n-1}\left[\frac{FwdFX_t}{FwdFX_n} - 1\right]$$

Where

I_t is the level of the Currency Hedged CMCI Index on CMCI Business Day (*t*).

I_n is the level of the Currency Hedged CMCI Index on the previous Rebalance Day *(n)*.

I_{n-1} is the level of the Currency Hedged index on the Business Day immediately before the previous Rebalance Day *(n)* or Inception Date as applicable. Between the Inception Date and first Rebalance Day shall be the level of the index on Inception Date.

FX_t is the value of one unit of USD in Hedged Currency (CCY) on CMCI Business Day (*t)* determined using $FXRate_t$ as follows:

$$FX_t = (FXRate_t)^{CCYScalar}$$

FX_n is the value of one unit of USD in Hedged Currency (CCY) on the previous Rebalance Day *(n)* determined using $FXRate_n$ as follows:

$$FX_n = (FXRate_n)^{CCYScalar}$$

$FXRate_n$ means the mid-rate determined from Currency Spot Page for the relevant Currency (CCY) around the Valuation Time for CMCI Business Day (t).

S_t is the value of the CMCI Index at time (*t).*

S_n is the value of the CMCI USD Index on the previous Rebalance Day *(n).*

$FwdFX_t$ is equal to FX_t if (*t)* is a Rebalance Date, otherwise, the Interpolated FX Forward Rate at time (*t*). $FwdFX_n$ is the Interpolated FX Forward Rate on the previous Rebalance Day (*n).*

$CCYScalar$ is equal to -1 or 1 as determined from the table below for the relevant Hedged Currency (CCY).

Interpolated FX Forward Rate ($IFXFwd_t$) is

$$IFXFWD_t = (FXRate_t + DayScalar_t \times FwdPoints_t)^{CCYScalar}$$

$DayScalar_t$ means in relation to any Business Day (*t),* the quotient of (x) number of calendar days from and excluding such Business Day *t* up to and including the immediately following Rebalance Date and (y) the total number of calendar days from and excluding such Business Day t up to and including the Expiry Date.

$FwdPoints_t$ for the relevant Currency (CCY) means in relation to any Business Day (*t*), the forward points for a one-month forward contract displayed as the mid-rate on Currency Fwd Points Page, on such Business Day (*t*) around the Valuation Time.

Valuation Time is 4pm London time.

Expiry Date is the day that is 2 CCY Business Days before the settlement date for the 1 month forward contract. The settlement date is published on the relevant Currency Fwd Points Page.

Rebalance Day will be the last good Business Day in London and New York each month.

Currency	Currency Spot Page	Currency Fwd Points Page	CCYScalar	CCY Business Day
CHF	CHF L160 Curncy	CHF1M L160 Curncy	1	SZ
EUR	EUR L160 Curncy	EUR1M L160 Curncy	-1	TE
GBP	EUR L160 Curncy	EUR1M L160 Curncy	-1	GB

The CMCI Monthly Hedged Index family is listed in the table below with their corresponding underlying indices.

Underlying Index Name	Underlying Index (USO)	EUR	CHF	GBP
UBS Bloomberg CMCI Agriculture USOTR	CMAGTR Index	CMAGEMT Index	CMAGCMT Index	CMAGGMT Index
UBS Bloomberg CMCI Composite USOTR	CMCITR Index	CMCIEMT Index	CMCICMT Index	CMCIGMT Index
UBS Bloomberg CMCI Composite USOTR 1Vc.71r	CMCITR1Y Index	CMCIEMTA Index	CMCICMTA Index	CMCIGMTA Index
UBS Bloomberg CMCI Composite USOTR·3 Month	CMCITR3M Index	CMCIEMT3 Index	CMCICMT3 Index	CMCIGMT3 Index
UBS Bloomberg CMCI Composite USOTR ·6 Month	CMCITR6M Index	CMCIEMT6 Index	CMCICMT6 Index	CMCIGMT6 Index
UBS Bloomberg BCOM Constant Maturity Composite TR	CMOJCITR Index	CMOJEMT Index	CMOJCMT Index	CMOJGMT Index
UBS Bloomberg CMCI Energy USOTR	CMENTR Index	CMENEMT Index	CMENCMT Index	CMENGMT Index
UBS Bloomberg CMCI Food USOTR	CMFOTR Index	CMFOEMT Index	CMFOCMT Index	CMFOGMT Index
UBS Bloomberg CMCI Industrial Metals USOTR	CMIMTR Index	CMIMEMT Index	CMIMCMT Index	CMIMGMT Index
UBS Bloomberg CMCI Livestock USOTR	CMLVTR Index	CMLVEMT Index	CMLVCMT Index	CMLVGMT Index
UBS Bloomberg CMCI Precious Metals USOTR	CMPMTR Index	CMPMEMT Index	CMPMCMT Index	CMPMGMT Index
UBS Bloomberg SPGSCI Constant Maturity Composite TR	CMSPCITR Index	CMSPEMT Index	CMSPCMT Index	CMSPGMT Index
UBS Bloomberg CMCI Components USOTR Soybean Oil	CTBOTR Index	CTBOEMT Index	CTBOCMT Index	CTBOGMT Index
UBS Bloomberg CMCI Components USOTR Corn	CTCNTR Index	CTCNEMT Index	CTCNCMT Index	CTCNGMT Index
UBS Bloomberg CMCI Components USOTR Brent Crude	CTCOTR Index	CTCOEMT Index	CTCOCMT Index	CTCOGMT Index
UBS Bloomberg CMCI Components Brent Crude Oil ICE USOTR 1Year	CTCOTR1Y Index	CTCOEMTA Index	CTCOCMTA Index	CTCOGMTA Index
UBS Bloomberg CMCI Components Brent Crude Oil ICE USOTR 3 Month	CTCOTR3M Index	CTCOEMT3 Index	CTCOCMT3 Index	CTCOGMT3 Index
UBS Bloomberg CMCI Components Brent Crude Oil ICE USOTR 6 Month	CTCOTR6M Index	CTCOEMT6 Index	CTCOCMT6 Index	CTCOGMT6 Index
UBS Bloomberg CMCI Components USOTR Cotton	CTCTTR Index	CTCTEMT Index	CTCTCMT Index	CTCTGMT Index
UBS Bloomberg CMCI Components USOTR Gold	CTGCTR Index	CTGCEMT Index	CTGCCMT Index	CTGCGMT Index
UBS Bloomberg CMCI Components High Grade Copper USOTR	CTHGTR Index	CTHGEMT Index	CTHGCMT Index	CTHGGMT Index
UBS Bloomberg CMCI Components USOTR ULS Diesel	CTHOTR Index	CTHOEMT Index	CTHOCMT Index	CTHOGMT Index
UBS Bloomberg CMCI Components USOTR Coffee	CTKCTR Index	CTKCEMT Index	CTKCCMT Index	CTKCGMT Index
UBS Bloomberg CMCI Components USOTR HRW Wheat KCBOT	CTKWTR Index	CTKWEMT Index	CTKWCMT Index	CTKWGMT Index
UBS Bloomberg CMCI Components Aluminium LME USOTR	CTLATR Index	CTLAEMT Index	CTLACMT Index	CTLAGMT Index
UBS Bloomberg CMCI Components USOTR Live Cattle	CTLCTR Index	CTLCEMT Index	CTLCCMT Index	CTLCGMT Index
UBS Bloomberg CMCI Components USOTR Lean Hogs	CTLHTR Index	CTLHEMT Index	CTLHCMT Index	CTLHGMT Index
UBS Bloomberg CMCI Components USOTR Lead	CTLLTR Index	CTLLEMT Index	CTLLCMT Index	CTLLGMT Index
UBS Bloomberg CMCI Components USOTR Nickel	CTLNTR Index	CTLNEMT Index	CTLNCMT Index	CTLNGMT Index
UBS Bloomberg CMCI Components USOTR Copper	CTLPTR Index	CTLPEMT Index	CTLPCMT Index	CTLPGMT Index
UBS Bloomberg CMCI Components USOTR Zinc	CTLXTR Index	CTLXEMT Index	CTLXCMT Index	CTLXGMT Index
UBS Bloomberg CMCI Components USOTR Natural Gas	CTNGTR Index	CTNGEMT Index	CTNGCMT Index	CTNGGMT Index
UBS Bloomberg CMCI Components USOTR Platinum	CTPLTR Index	CTPLEMT Index	CTPLCMT Index	CTPLGMT Index
UBS Bloomberg CMCI Components USOTR Cocoa	CTQCTR Index	CTQCEMT Index	CTQCCMT Index	CTQCGMT Index
UBS Bloomberg CMCI Components USOTR ICE Gasoil	CTQSTR Index	CTQSEMT Index	CTQSCMT Index	CTQSGMT Index
UBS Bloomberg CMCI Components USOTR EN Sugar	CTQWTR Index	CTQWEMT Index	CTQWCMT Index	CTQWGMT Index
UBS Bloomberg CMCI Components USOTR NY Sugar	CTSBTR Index	CTSBEMT Index	CTSBCMT Index	CTSBGMT Index
UBS Bloomberg CMCI Components USOTR Silver	CTSITR Index	CTSIEMT Index	CTSICMT Index	CTSIGMT Index
UBS Bloomberg CMCI Components USOTR Soymeal	CTSMTR Index	CTSMEMT Index	CTSMCMT Index	CTSMGMT Index
UBS Bloomberg CMCI Components USOTR Soybeans	CTSYTR Index	CTSYEMT Index	CTSYCMT Index	CTSYGMT Index
UBS Bloomberg CMCI Components USOTR WTI Crude	CTWCTR Index	CTWCEMT Index	CTWCCMT Index	CTWCGMT Index
UBS Bloomberg CMCI Components WTI Crude Oil USOTR ·1Year	CTWCTR1Y Index	CTWCEMTA Index	CTWCCMTA Index	CTWCGMTA Index
UBS Bloomberg CMCI Components WTI Crude Oil USOTR ·3 Month	CTWCTR3M Index	CTWCEMT3 Index	CTWCCMT3 Index	CTWCGMT3 Index
UBS Bloomberg CMCI Components WTI Crude Oil USO TR ·6 Month	CTWCTR6M Index	CTWCEMT6 Index	CTWCCMT6 Index	CTWCGMT6 Index
UBS Bloomberg CMCI Components USOTR Wheat	CTWWTR Index	CTWWEMT Index	CTWWCMT Index	CTWWGMT Index
UBS Bloomberg CMCI Components USOTR RBOB Gasoline	CTXBTR Index	CTXBEMT Index	CTXBCMT Index	CTXBGMT Index
UBS Bloomberg CMCI ex Agriculture & Livestock Capped USOTR	CMXALCTR Index	XMXA LCET Index	XMXA LCCT Index	XMXA LCGT Index

E. Details of Calculations and Assumptions for CMCI Benchmark Indices

E.1. Calculation of the CMCI in the particular case of a change in MDPs

Should any parameter of a futures contract be changed by the relevant exchange, or should the Index Administrator change the MDP rule (by changing the naMDP, introducing a new MDPa or changing/removing an existing MDPa) a discontinuity in the Index could arise.

In any of the above cases the Index mechanism avoids such discontinuity by allowing the new parameter or

parameters to be introduced over the course of a designated appropriate Maintenance Period. We substitute form (3) and calculate the Curve Value as per the following formula (3b) below:

$$CV_{ICR,t,t} = \frac{MF_{ICR,old,,MDP_{old}}}{MF_{ICR,new,,MDP_{new}}} \times \sum_{c=1,N} RP1_{c,t}\left[\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old,MDP_{old}} \times TWAF_{c,j,old,MDP_{old}} \times XDCMFP_{c,j,t,t,MDP_{old}}\right] + \sum_{c=1,N} RP2_{c,t}\left[\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new,MDP_{new}} \times TWAF_{c,j,new,MDP_{new}} \times XDCMFP_{c,j,t,t,MDP_{new}}\right], \quad (3b)$$

where:

$RP1_{c,t}$ and $RP2_{c,t}$ the rebalancing proportions for component c, at calculation date t (as defined below).

New Maintenance Factors are calculated at the close of business on the CMCI Business Day immediately preceding the first maintenance day, and their values used for subsequent calculations. From (4) we then get (4b):

$$CVR_{ICR,t} = \frac{\sum_{c=1,N}\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new,MDP_{new}} \times TWAF_{c,j,new,MDP_{new}} \times XDCMFP_{c,j,t,t,,MDP_{new}}}{\sum_{c=1,N}\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old,MDP_{old}} \times TWAF_{c,j,old,MDP_{old}} \times XDCMFP_{c,j,t,t,,MDP_{old}}}, \quad (4b)$$

Where CVR is the Curve Value Ratio. We then obtain (5b):

$$MF_{ICR,new} = \frac{MF_{ICR,old}}{CVR_{ICR,t}}, \quad (5b)$$

The procedure described above is theoretically valid for any change of parameters affecting the level of the XDCMFP and not only the MDP date.

INDEX

SCHEDULE 1

UBS Bloomberg BCOM Constant Maturity Index

Technical Document

As of 5 October 2015

The UBS Bloomberg BCOM Constant Maturity Index (for the purpose of this Technical Document "CM- BCOM" or "Index") is a diversified commodity index that uses the Bloomberg Commodity Index ("BCOM") commodity components and weights together with the UBS Bloomberg CMCI ("CMCI") constant maturity methodology of daily rolling and the diversification beyond short term futures. This combination provides a unique balance between the widely followed BCOM and the benefits of diversification across maturities and rolling methodology provided by the CMCI.

UBS Bloomberg BCOM Constant Maturity Index
(CM-BCOM)

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Unless otherwise indicated, references in this Technical Document to "UBS" refer to UBS AG, London Branch and not to the consolidated subsidiaries of UBS AG or to any affiliates of UBS.

Introduction

The Bloomberg Commodity Index remains one of the most widely used commodity index with a well-established commodity rolling methodology. BCOM was designed to include only short term futures and rolls on a fixed time schedule once a month. However, as markets have developed, and the liquidity of longer dated contracts has improved, there are now many recognized benefits to considering a more diversified exposure across the commodity term structure and an alternative rolling mechanism.

These benefits include: (i) access to additional trading opportunities; (ii) potential lower volatility; (iii) closer matching of investment horizons; and (iv) the potential to mitigate negative roll yield. The UBS Bloomberg CMCI, launched in January 2007, addresses these opportunities and introduces two unique concepts to commodity index investment: (i) CMCI allows a more diversified exposure to the asset class by representing the commodity futures curve through a number of fixed constant maturities; and (ii) provides a more continuous exposure through the daily rolling of forward positions.

The UBS Bloomberg BCOM Constant Maturity Index ("CM-BCOM") was developed in response to investor demand for an index with identical component weights to the widely used BCOM, but with a more diversified exposure to the forward curve and with access to the innovative calculation methodology introduced by the CMCI. CM-BCOM allows investors to combine the above requirements in one index, which uses the exact commodity components and rebalancing methodology of the BCOM, but instead of rolling short term futures between the 5^{th} and 9^{th} business day of each month, CM-BCOM uses the forward tenors, daily rolling and constant maturity methodology of the CMCI.

This combination provides a unique balance between the widely followed BCOM and the benefits of diversification across maturities and rolling methodology provided by the CMCI. The constant maturity approach and longer maturities that the CMCI brings to the CM-BCOM may lead to lower volatility and mitigation of negative roll yield while still keeping pace during periods of backwardation.

CM-BCOM allows investors who want to continue to closely track the BCOM to benefit from the second generation index advantages introduced by the CMCI. Investors can trade CM-BCOM either as a direct replacement for BCOM or through a long/short product benchmarked to the BCOM (alpha product). In the latter product the performance removes the impact of index weightings and represents the difference in returns due to rolling methodologies and curve positioning.

A detailed explanation of CMCI and Constant Maturity methodology is outside of the scope of this Technical Document and is fully described in the CMCI Technical Document which can be downloaded from the CMCI Website. Terms not otherwise defined herein shall have the meaning given to them in the CMCI Technical Document.

Summary of Index characteristics

General Characteristics

- The CM-BCOM is a benchmark commodity forward curve product based on the methodology of the CMCI Index[8] and the composition and rebalancing of the BCOM.
- The Index Administrator publishes four composite indices and one sub-index per commodity sector, each with identical component weights to the equivalent BCOM
- Arithmetic averaging in both the commodity and forward curve space
- Price Index (PI), Excess Return (ER) and Total Return (TR) Indices are published daily
- Each index is calculated in USD. Currency crossed and currency hedged versions can also be made available in other major currencies on request.

Composition of the CM-BCOM and Weightings

- CM-BCOM uses all of the commodity components and their respective weights as they stand in the BCOM. As the weights of the CM-BCOM will deviate from those of the BCOM over time, a monthly rebalancing procedure is established, which takes place over the CM-BCOM Maintenance Period.
- CM-BCOM component weights ("CM-BCOM Target Weights") are rebalanced on a monthly basis from the 5th to 9th CM-BCOM Business Days to match the BCOM Effective Weights as they stand on the 4th BCOM Business Day
- CM-BCOM Individual Tenor Weights (ITW) are inherited from the Individual Tenor Weights of the CMCI

The CM-BCOM re-balances on a monthly basis between the 5th and the 9th CM-BCOM Business Day of the month back to the Individual Tenor Weights

The "BCOM Effective Weights" mean the BCOM component weights as they stand on the 4th BCOM Business Day of each month

"BCOM Target Weights" means weights defined on the 4th BCOM Business Day of January, consistent with the BCOM methodology

Effective Duration

- The average duration of the CM-BCOM will change over time as the Individual Tenor Weights of the CMCI are adjusted periodically by the Index Administrator.

Bloomberg: Real time and settlement CM-BCOM prices as well as important static data and related information are made available on Bloomberg page **CUBS <GO>**. Bloomberg Tickers for the CM-BCOM USD Indices are constructed as shown in table.

8 The UBS Bloomberg CMCI Index family was launched in January 2007 to allow investors to manage the limitations of "nearby-only" vehicles embodied by many major commodity indices and invest along the entire forward curve. (For more information on the UBS Bloomberg CMCI Index family refer to the CMCI Technical Document available on www.ubs.com/cmci.)

TABLE I. BLOOMBERG TICKERS CONSTRUCTION

Sector/Component	CM-BCOM Ticker	+	Index Type
Composite	***[To be separately announced by the Index Administrator as soon as reasonably practicable following the publication of this Technical Document]***		**Excess Return = ER** **Total Return = TR** **Price Index = PI**
Energy	***[To be separately announced by the Index Administrator as soon as reasonably practicable following the publication of this Technical Document]***		
Industrial Metals	***[To be separately announced by the Index Administrator as soon as reasonably practicable following the publication of this Technical Document]***		
Precious Metals	***[To be separately announced by the Index Administrator as soon as reasonably practicable following the publication of this Technical Document]***		
Agriculture	***[To be separately announced by the Index Administrator as soon as reasonably practicable following the publication of this Technical Document]***		
Livestock	***[To be separately announced by the Index Administrator as soon as reasonably practicable following the publication of this Technical Document]***		

Source: UBS, Bloomberg

For other currencies and equivalent CM-BCOM indices please refer to the Bloomberg Help functions.

Provisions incorporated by reference into this Technical Document

1. The third to ninth paragraphs (inclusive) of the Executive Summary section of the CMCI Technical Document are deemed to be incorporated into this Technical Document, subject to the following amendments:
    a. The words "Bloomberg Index Services Limited" is the index administrator of the CM-BCOM (the "**Index Administrator**") and UBS AG is the owner of the CM-BCOM ("**Index Owner**")." are inserted at the beginning of the third paragraph.

2. Section 2 (Risk Factors) of the CMCI Technical Document is deemed to be incorporated in this Technical Document.

3. The fifth, sixth, seventh, eighth, ninth and tenth paragraphs of section 1.1 of the CMCI Technical Document shall be deemed to be incorporated in this Technical Document.

4. Section 1.2 of the CMCI Technical Document shall be deemed to be incorporated in this Technical Document.

5. Sections 3.6.2, 3.6.3 and 3.6.4 of the CMCI Technical Document shall be deemed to be incorporated into this Technical Document.

6. Section 3.7 of the CMCI Technical Document shall be deemed to be incorporated into this Technical Document, subject to the following amendments:
    a. the words "(see formula (3), DCNP)" are replaced with "(see formula (3) of the CMCI Technical

Document)"; and

b. the words "membership of a Component in the Index" are replaced with "membership of a component in the Index".

7. The following amendments are deemed to be made to all provisions incorporated into this Technical Document:
   a. references to "CMCI" are replaced with "CM-BCOM";
   b. references to the "CMCI level" are replaced with "CM-BCOM level"; and
   c. references to "the Bloomberg Page and/or the CMCI Website" are replaced with "the Bloomberg Page, the Reuters Page and/or the CMCI Website".

8. To the extent that any provision in the CMCI Technical Document incorporated by reference in this Technical Document conflicts with another provision in this Technical Document, the terms of the provision incorporated by reference in this Technical Document shall prevail.

1. Index composition

Commodity weights and Individual Tenor weights used in CM-BCOM are a combination of BCOM commodity component weights (as they stand on the 4th BCOM Business Day of each month) and CMCI Individual Tenor Weights.

1.1. CM-BCOM Component Selection Process

The CM-BCOM is designed to match the commodity components of the BCOM.

Where commodity components in the BCOM are identical to those in the CMCI Composite Index, the exact equivalent CMCI component is used in the CM-BCOM.

Where a commodity component exists in the BCOM but not in the CMCI, then a new CMCI component index will be created.

1.2. Determination of CM-BCOM Target Weights

The CM-BCOM Target Weight for each commodity component is set in January of each calendar year to be equivalent to the BCOM weights defined on the 4th BCOM Business Day of January, consistent with BCOM methodology.

The CM-BCOM Effective Weights are set monthly over the CM-BCOM Maintenance Period to be equal to the weights of each equivalent commodity component in the BCOM as they stand on the 4th BCOM Business Day of the month in which the Maintenance Period takes place ("Effective Weights"). The CM-BCOM commodity components are reset to their Effective Weights once a month during the Maintenance Period (defined as the period from the 5th to the 9th CM-BCOM Business Day).

1.2.1 BCOM Effective Weights

The weight for each commodity component in the CM-BCOM (CM-BCOM Target Weights) is equal to the weight of the equivalent commodity component of the BCOM on the 4th BCOM Business Day of each month. The Effective Weights are determined on that day using the Contract Production Weight (CPW) and the Daily Contract Reference Price of the Roll Contract Expiration (DCRP2). These terms as well as well other information in relation to BCOM index can be found in the index manual available for download on http://www.bloombergindexes.com/bloomberg- commodity-index-family/.

1.3. Determination of CM-BCOM Individual Tenor Weights (ITWs)

The CM-BCOM inherits its ITWs from the CMCI Benchmark Index. The CMCI ITWs are defined on an annual basis as part of the July CMCI Maintenance Period.

In relation to any commodity components created specifically for CM-BCOM or those commodity components

that are no longer part of the CMCI Benchmark Index, the ITWs are set at 100% for the 3 months constant maturity.

The CM-BCOM re-balances its tenor weights to the CMCI ITWs on a monthly basis during the CM-BCOM Maintenance Period.

2. The CM-BCOM Index Calculation Methodology

For each Index, Bloomberg calculates and publishes three indices:

- The "Price Index" (CM-BCOM-PI),
- The "Excess Return" (CM-BCOM-ER),
- The "Total Return" (CM-BCOM-TR).

Upon request, all three series can be calculated for the following Standard Constant Maturities (SCM):

- 3 Months (3M),
- 6 Months (6M),
- 1 Year (12M),
- 2 Years (24M),
- 3 Years (36M).

2.1. The CM-BCOM-Price Index (CM-BCOM-PI)

For the purpose of the calculation of the CM-BCOM, we differentiate the calculations taking place during the CM-BCOM Maintenance Period and those performed during non-maintenance periods. These distinctions apply equally to the Price Index (PI), the Excess Return (ER) and Total Return (TR) indices. Maintenance periods take place each month and are used to rebalance the components of the CM-BCOM to the new CM-BCOM Target or Effective Weight (together "Weights" or "TWs") s, as discussed below in Section 2.2.

Maintenance periods, which occur monthly, involve rebalancing of the Index components to new CM-BCOM Target Weights.

Non-maintenance periods refer to periods other than those in which a re-weighting takes place.

2.1.1. The Price Index during non-maintenance periods

The CM-BCOM Price Index (CM-BCOM-PI) is a representation of commodity price levels for a designated part of the forward curve and calculated on the basis of the prices of the CMCI Constant Maturity Forwards on the relevant commodities for the appropriate tenors.

During a non-maintenance period, the CM-BCOM-PI calculated for a family of defined Standard Constant Maturities (SCM) is obtained by the multiplication of the Basket Value (BV) (which represents the value of a component or group of components of the CM-BCOM) by the Maintenance Factor (MF). The Maintenance Factor is used to prevent any discontinuity of the price index associated with changes in nominal weights over time. For any non-maintenance days, BV is calculated for each component as the Sum of Daily Constant Maturity Forward Price (DCMFP) of each basket component multiplied by the respective Component Nominal Weight (CNW). The DCMFP are adjusted by price scalars reflecting reference foreign currency exchange rates versus, for example, the U.S. Dollar, such that all DCMFP are expressed in the same currency.

For non-maintenance days and, for example, on the USD index, we have:

$$CM-BCOM-PI_{USD,SCM,T} = MF_{SCM,USD} \sum_{C=1,N} DCV_{c,USD,SCM,t,t} = MF_{SCM,USD} \times BV_{USD,SCM,t,t}$$

and

$$DCV_{c,USD,SCM,t,t} = IsIn_{c,Index} \times DCMFP_{c,SCM,t,t} \times CNW_{c,SCM} \times \left[FX_{USD,c,t}\right]^{\text{CCYScalar}_{\text{USD,ccy}}} \quad (2)$$

where:

$BV_{USD,SCM,t,t}$ is the Basket Value (i.e for any given index, the sum of Daily Component Value),

$DCV_{c,USD,SCM,t,t}$ is the Daily Component Value calculated at time t,

$CNW_{c,SCM,t}$ is the Component Nominal Weight for a component c and for a specific Standard Constant Maturity (SCM),

$DCMFP_{c,SCM,t,t}$ is the Daily Constant Maturity Forward Price, for a component (c) and for a specific SCM, calculated at time (t) and with Contract Proportions taken at time (t).

$FX_{USD,c,t}$ is the currency exchange rate between the quotation currency of the component instrument and the Index Currency Reference (ICR) in which the Index is expressed (here USD). For official settlement prices, the CM-BCOM uses a direct or USD cross fixing price.

For the USD direct rate quotes, the price source is set to Bloomberg on page **CCY Curncy HP <GO>** (Note the Location Time zone is set to "New-York").
Cross rates are calculated (please see Appendix A in the CMCI Technical Document which shall apply to the CM-BCOM as if references in such Appendix A to "CMCI" were references to "CM-BCOM")) so that the foreign exchange adjustment within the Index features no possible arbitrage.

$IsIn_{c,Index}$ a scalar factor with positive value, which allows to control the component (c)'s Effective Weight in the calculated index.

$CCYScalar_{USD,CCY}$ is +1 or –1 (please refer to the CMCI Technical Document for details)

The reader will note that we use Spot currency rates in all cases. It is our opinion that the use of forward currency rates would alter significantly both the transparency and simplicity of the Index definitions without providing substantial benefit to the Index, as we see that returns on forward currency rates as being highly correlated with their spot rates.

Indices for each SCM are calculated in U.S. Dollars (USD). The CM-BCOM FX price/rate sources are the same as the CMCI Index and can be found in the CMCI Technical Document.

2.1.2. Index continuity maintenance

As noted, the CM-BCOM rebalances monthly into new CM-BCOM Weights, which implies new Component Nominal Weights (CNWs) and Maintenance Factors (MFs) for each month.

On the day before the start of the CM-BCOM Maintenance Period, the CM-BCOM is calculated based on the old CNWs (reflecting old Weights) and MFs used so far in the calculation.

The first part of the formula is then adjusted for the Maintenance Factor changes, and multiplied by the "Basket Value Ratio" (BVR) which reflects the change in the Basket Value resulting from the shift from the old to the new Weights and therefore also to the new CNWs.

The process also applies to all maintenance periods. During maintenance periods, the calculation formula for BV is:

$$BV_{ICR,SCM,t,t} = MF_{ICR,old} / MF_{ICR,new} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,old} \times RP1_{c,t} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{CCYScalar_{ICR,ccy}} \right] + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,new} \times RP2_{c,t} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{CCYScalar_{ICR,ccy}} \quad , \quad (3)$$

where:

$RP1_{c,t}$ and $RP2_{c,t}$ the rebalancing proportions for component (c), at calculation date t. RP1 and RP2 are the factors that relate to the weight on each day of the CM-BCOM Maintenance Period over which the Index goes from Old to New CNWs and MFs.

RP1 and RP2 take the following values

$$RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\} \quad , \quad RP2_{c,t} = 1 - RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\} \quad (4)$$

New Maintenance Factors are calculated at the close of business on the CM-BCOM Business Day immediately preceding the first maintenance day, and their values used for subsequent calculations:

$$BVR_{ICR,SCM,t,t} = \frac{\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{ICR,ccy}}}{\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,SCM,old} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{ICR,ccy}}}, \quad (5)$$

Where BVR is the Basket Value Ratio. We then obtain:

$$MF_{ICR,SCM,new} = \frac{MF_{ICR,SCM,old}}{BVR_{ICR,SCM,t,t}}, \quad (6)$$

2.1.3. The Index rebalancing mechanism and the calculation of the CNWs

As noted above, the CM-BCOM is rebalanced monthly to new CM-BCOM Weights (as specified in section 1.2) during each CM-BCOM Maintenance Period. The process is automatic and is implemented via a pre-defined algorithm.

The calculation of the new CNWs is effected monthly, at the close of business on the CM-BCOM Business Day immediately preceding the first day of the CM-BCOM Maintenance Period (i.e. the fifth business day of the month).

On that day, the new CNWs are calculated such that the effective weights match the component Weight, defined for the next period. At the close of business on the day prior to the first maintenance day, using known settlement prices, we solve for CNWs.

Without loss of generality, we define $CNW_{N,SCM,new} = x$ as an arbitrary constant.

For all components in the composite index, we then solve for:

$$\frac{CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{ICR,ccy}}}{\sum_{c=1,N} CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{ICR,ccy}}} - TW_{c,\%} = 0 \quad (7)$$

Also note that:

$TW_1 + \ldots + TW_N = 1$

For notation purposes, one introduces currency denominated quantities:

$$XDCMFP_{ICR,c,SCM,t,t} = DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{ICR,ccy}} (8)$$

$$XDCMFP_c = XDCMFP_{ICR,c,SCM,t,t} (9)$$

As shown in Appendix C to the CMCI Technical Document where, for the purposes hereof, references to the CMCI are replaced with references to CM-BCOM, this system has the following analytic solution:

$$\begin{aligned} CNW_{ICR,1,SCM,new} &= \frac{TW_1.XDCMFP_N}{TW_N.XDCMFP_1}x \\ CNW_{ICR,2,SCM,new} &= \frac{TW_2.XDCMFP_N}{TW_N.XDCMFP_2}x \\ CNW_{ICR,3,SCM,new} &= \frac{TW_3.XDCMFP_N}{TW_N.XDCMFP_3}x \\ \cdot \quad & \cdot \quad \cdot \\ CNW_{ICR,N,SCM,new} &= x \end{aligned} \qquad (10)$$

Once new CNWs are calibrated for each SCM, the new Maintenance Factors (MF) for each index are calculated as per (7) above, and the CNWs are made available for the calculation of the composite indices as well as all commodity group (or sector) and single component indices that exists in the CM-BCOM family.

2.2. The CM-BCOM Excess Return (CM-BCOM-ER)

2.2.1. Calculation during non-maintenance periods

The CM-BCOM Excess Return Index is calculated on each CM-BCOM Business Day and represents the uncollateralized return of the CM-BCOM basket over time, and for one specific SCM. The Index has the following expression:

$$CM-BCOM-ER_{SCM,t} = CM-BCOM-ER_{SCM,t-1} \times (1+IDR_{SCM,t}) \quad (11)$$

with:

$$IDR_{SCM,t} = \frac{BVF}{BVI} - 1 = \frac{BV_{SCM,t,t-1}}{BV_{SCM,t-1,t-1}} - 1 \quad (12)$$

$$BVI = BV_{ICR,SCM,t-1,t-1} = \sum_{c=1,N} XDCMFP_{ICR,c,SCM,t-1,t-1} \times CNW_{c,SCM} \times IsIn_{c,Index}$$

$$BVF = BV_{ICR,SCM,t,t-1} = \sum_{c=1,N} XDCMFP_{ICR,c,SCM,t,t-1} \times CNW_{c,SCM} \times IsIn_{c,Index}$$

And where:

BVF	is the Basket Value Final, calculated for an Index Currency Reference ICR, a Standard Constant Maturity SCM, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,
BVI	is the Basket Value Initial, calculated for an Index currency reference ICR, a Standard Constant Maturity SCM, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,
$XDCMFP_{ICR,c,SCM,t,t-1}$	is the currency translated Daily Constant Maturity Forward Price, calculated for an Index currency reference ICR, a Standard Constant Maturity SCM, for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1 (as defined in Section 2.1.3.).
$IsIn_{c,Index}$	a scalar factor with positive value, which allows to control the component c's effective weight in the calculated index.

CM-BCOM Excess Return Indices are set equal to 1000 on 29 January 2007.

2.2.2. Calculation during maintenance periods

The Index Daily Return is defined as the percentage change in the BV of the CM-BCOM from one CM-BCOM Business Day to the next. It reflects the return that would have been realized by holding positions in the DCMF to reflect the CNWs (Weights), from the closing of the trading platform on the prior CM-BCOM Business Day to the closing of the trading platform on the next CM-BCOM Business Day.

The daily Rebalancing Proportions (RP) used to calculate BVI and BVF are identical to those used to calculate the CM-BCOM Price Index on the CM-BCOM Business Day immediately preceding the calculation date. During a standard rebalancing period from the first to the last CM-BCOM Business Day of the rebalancing period we have:

$$BVI_{ICR,SCM,t-1,t-1} = MF_{ICR,SCM,old} / MF_{ICR,SCM,new} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,old} \times RP1_{c,t-1} \times XDCMFP_{ICR,SCM,c,t-1,t-1} \right] + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,new} \times RP2_{c,t-1} \times XDCMFP_{ICR,SCM,c,t-1,t-1} \quad (13)$$

and

$$BVF_{ICR,SCM,t,t-1} = MF_{ICR,SCM,old} / MF_{ICR,SCM,new} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,old} \times RP1_{c,t-1} \times XDCMFP_{ICR,SCM,c,t,t-1} \right] + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,new} \times RP2_{c,t-1} \times XDCMFP_{ICR,SCM,c,t,t-1} \quad (14)$$

where RP1 and RP2 take the following values

$RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\}$, $RP2_{c,t} = 1 - RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\}$

2.3. The CM-BCOM-Total Return (CM-BCOM-TR)

2.3.1. Calculation of the Total Return Index

CM-BCOM-TR is derived from the CM-BCOM Excess Return Index. In addition to uncollateralized returns generated from the CM-BCOM basket, a daily fixed income return is added and the Index value takes the following expression:

$$CM-BCOM-TR_{ICR,SCM,t} = CM-BCOM-TR_{ICR,SCM,t-1} \times DITRF_{ICR,SCM,t-1} \quad (15)$$

Where

$$DITRF_{ICR,SCM,t} = \left(1 + IDR_{ICR,SCM,t} + IRR_{ICR,t}\right) \quad (15b)$$

IRR — **Interest Rate Return** is the compounding factor calculated for each Index Currency reference,

DRR — **Daily Reference Rate** is a function of the rate available on the immediately Preceding CM-BCOM Business Day (ARR), the ARRA and ARRS. The form of the Compounding expression is a function of the Index Currency Reference (ICR) Defined below, and DRR takes the following form:

ARRA & ARRS — **Available Reference Rate Adjustment** and **Available Reference Rate Scalar** are respectively the rate adjustment and scalar factor used - when applicable - to reflect any particular funding cost or rate differential applicable and associated to an ICR for an AA+/AAA (S&P) and/or AA1/AAA (Moodys) issuer. The ARRA and ARRS can change periodically in accordance with changes made to such rates in the CMCI.

"caldays" is the integer number of Calendar days from the previous CM-BCOM Business Day to the CM-BCOM Business Day on which the calculation is made

The fixed income return component of the Total Return Index reflects the interest earned on securities theoretically deposited as margin for hypothetical positions in the contracts comprising the Index.

CM-BCOM Total Return Indices are set equal to 1000 on 29 January 2007.

2.3.2. Available Reference Rates

Please see Section 3.4.2 of the CMCI Technical Document for the definition of the Available Reference Rates and Section 3.6.4 of the CMCI Technical Document, as incorporated by reference into this Technical Document, for the definition of Interest Rate Disruption Events.

2.4. CM-BCOM Business Day Conventions

2.4.1. CM-BCOM Business Day definition

A CM-BCOM Business Day shall be deemed to be any day which is a CMCI Business Day (See Section 3.6 of the CMCI Technical Document), provided that the Maintenance Period applicable to the CM-BCOM shall have the meaning given to this term in Section 1.2 (*Determination of CM-BCOM Target Weights*) above.

3. Construction of the CM-BCOM Benchmark Index

The CM-BCOM is based on the CMCI Benchmark Index, and strictly respects the original CMCI calculation mechanism and benchmark composition regarding Individual Tenor Weights (ITW). However, Weights in the CM - BCOM are taken from the BCOM.

The CM-BCOM uses the same curve rebalancing mechanism available for the CMCI Benchmark Index. The curve rebalancing is a procedure designed to provide additional weight control over the fluctuations of the structures of forward curves.

The following section provides a detailed explanation for the calculation of:

- The CM-BCOM Price Index (CM-BCOM-PI),
- The CM-BCOM Excess Return Index (CM-BCOM-ER),
- The CM-BCOM Total Return Index (CM-BCOM-TR).

3.1. The CM-BCOM - Price Index (CM-BCOM-PI)

For the purpose of the calculation of the CM-BCOM, we differentiate the calculations taking place during rebalancing periods, or maintenance periods, and those performed during non-rebalancing periods, or non-maintenance periods. These distinctions apply equally to the CM-BCOM Price Index (PI), the Excess Return (ER) and Total Return (TR) indices.

Components maintenance periods take place each month and are used to rebalance the CM-BCOM exposure to the effective weights of the BCOM, as discussed below in Section 3.1.2. Curve rebalancing periods also take place each month during the CM-BCOM Maintenance Period and are used to rebalance the CM-BCOM exposure to the respective segments of the forward curve to their respective Individual Tenor Weights (ITW), as discussed below in Section 3.1.3. Non-maintenance periods refer to periods other than those in which a rebalancing or re-weighting takes place.

3.1.1. The Price Index during non-maintenance periods

The CM-BCOM Price Index (CM-BCOM-PI) is a representation of commodity price levels for a designated segment forward curve and calculated on the basis of the prices of the Constant Maturity Forwards on the relevant commodities as defined in the CMCI Technical Document.

During non-maintenance periods, the CM-BCOM-PI is obtained by the multiplication of the Curve Value (CV) (which represents the value of the tradable forward curve for a component or group of components of the Index) by the Maintenance Factor (MF). The Maintenance Factor, unique to each index (i.e. a function of each basket composition), is used to prevent any discontinuity of the price index associated with changes in nominal weights over time.

For any non-maintenance days, CV is calculated for each component as the sum of Curve Component Values, which, in turn, is equal to the sum, for each Standard Constant Maturity (SCM), of Daily Constant Maturity Forward Price (DCMFP) multiplied by the respective Component Nominal Weight (CNW) and by the respective Tenor Weight Adjustment Factors (TWAF). The DCMFP are adjusted by price scalars reflecting reference foreign currency exchange rates versus the Reference Currency (ICR), such that all DCMFP are all expressed in the same currency.

For non-maintenance days we have:

$$CM-BCOM-PI_{ICR,t} = MF_{ICR} \times CV_{ICR,t,t} = MF_{ICR} \times \sum_{c=1,N} CCV_{c,ICR,t,t} \quad (26)$$

and

$$CCV_{c,ICR,t,d} = \sum_{j=1,AT} IsIn_{c,j,Index} \times CNW_{c,j} \times TWAF_{c,j} \times DCMFP_{c,j,t,d} \times \left[FX_{ICR,c,t}\right]^{CCYScalar_{ICR,ccy}} \quad (18)$$

where:

$CV_{ICR,t,t}$	is the Curve Value (i.e for any given index, the sum of Curve Component Value),
$CCV_{c,ICR,t,t}$	is the Curve Component Value for a component c calculated at time t,
$CNW_{c,j}$	is the Component Nominal Weight for a component c and a Standard Constant Maturity j,
$TWAF_{c,j}$	is the Tenor Weight Adjusting Factor for a component c and a Standard Constant Maturity j,
$DCMFP_{c,j,t,t}$	is the Daily Constant Maturity Forward Price, for a component c and for a SCM j calculated at time t and with Contract Proportions taken at time t.
$FX_{ICR,c,t}$	is the currency exchange rate between the quotation currency of the component instrument and the Index currency reference (ICR) in which the Index is expressed, as per the CMCI Technical Document.
$IsIn_{c,j,Index}$	a binary constant with value 1 or 0 to indicate if the component c and SCM j is a member of the CMCI Index being calculated (note if $IsIn_{c,Index}$=0 then all $IsIn_{c,j,Index}$ =0),
AT	is the number of available Tenors for a component (c),
$CCYScalar_{ICR,CCY}$	is +1 or –1, with ICR the Index Currency Reference and CCY the quotation currency of the underlying asset of futures contract.

Further, we simplify notations by introducing XDCMFP as the currency converted DCMFP. We have:

$$XDCMFP_{ICR,c,j,t,d} = DCMFP_{c,j,t,d} \times \left[FX_{ICR,c,t}\right]^{CCYScalar_{ICR,ccy}} \quad (18a)$$

CM-BCOM Benchmark Price Indices were set to 1000 on 29th Jan 2007

3.1.2. Index continuity maintenance

The Individual Tenor Weights (ITWs) of the CM-BCOM are rebalanced on a monthly basis during CM-BCOM Maintenance Period. The monthly re-weighting events together with the rebalancing automatically trigger the recalculation, for each Standard Constant Maturity, of new Component Nominal Weights (CNWs) as well as new Target Weight Adjustment Factors (TWAFs).

CM-BCOM rebalances its forward curve exposure every month. The curve rebalancing mechanism is independent from the component rebalancing or re-weighting mechanism.

On the day before the start of the maintenance period, the CM-BCOM is calculated based on the old CNWs (reflecting old Weights), old TWAFs and old MFs used so far in the calculation.

The first part of the formula is then adjusted for the Maintenance Factor changes, and multiplied by the Curve Value Ratio (CVR) which reflects the change in the Curve Value resulting from the shift from the Old to the New CNWs and TWAFs.

The process also applies to all CM-BCOM Maintenance Periods. During Maintenance Periods, the calculation formula for CV is:

$$CV_{ICR,SCM,t,t} = \frac{MF_{ICR,old}}{MF_{ICR,new}}\left[\sum_{c=1,N} RP1_{c,t}\left[\sum_{\mathrm{j=1,AT}} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,j,t,t}\right]\right] + \left[\sum_{c=1,N} RP2_{c,t}\left[\sum_{\mathrm{j=1,AT}} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,c,j,t,t}\right]\right], \quad (19)$$

where:

$RP1_{c,t}$ and $RP2_{c,t}$ the rebalancing proportions for component (c), at calculation date (t) (as defined below).

New Maintenance Factors are calculated at the close of business on the CM-BCOM Business Day immediately pre- ceding the first maintenance day, and their values used for subsequent calculations:

$$CVR_{ICR,t,t} = \frac{\sum_{c=1,N}\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,c,SCM,t,t}}{\sum_{c=1,N}\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,SCM,t,t}}, \quad (20)$$

Where CVR is the Curve Value Ratio. We then obtain:

$$MF_{ICR,new} = \frac{MF_{ICR,old}}{CVR_{ICR,t,t}}, \quad (21)$$

Market Disruption Events are dealt with the procedures set forth in Sections 3.6.2, 3.6.3, 3.6.4 and 3.6.5 of the CMCI Technical Document, as incorporated by reference into this Technical Document.

3.1.3. The Index Curve rebalancing mechanism and the calculation of TWAFs

The CM-BCOM rebalances monthly in order to rebalance the positions held on each of the respective Standard Constant Maturities or Tenors.

This rebalancing is necessitated by the fact that the index weightings are in part based on the prices of each of the constituent constant maturity forward prices and naturally over-weights the best performing tenors and under- weights the worst performing ones. As market prices fluctuate, the effective weights of the constituent tenors "drift" from their initial weights. As a result, it is necessary to re-balance the curves periodically to maintain their original weightings

This is accomplished by rebalancing the Individual Tenor Weights (ITW) during each curve maintenance

period. The process is automatic and is implemented via a pre-defined algorithm. The calculation of the new TWAFs is effected monthly, at the close of business on the business day which immediately preceding the first rebalancing day (i.e. the fourth to last business day of the month).

On that day, the new TWAFs are calculated such that the effective ITWs match the Individual Tenor Weights (ITW) defined for the next period (for curve rebalancing periods), or component Tenor Effective Weights (CTEW) for the current period (for non curve rebalancing periods).

3.1.3.1. Calculation of TWAFs for curve rebalancing periods

At the close of business on the day prior to the first maintenance day, using known settlement prices, we solve for TWAFs as the product of the Adjusting Factor (AF) and the Individual Tenor Weights (ITW).

$$TWAF_{ICR,c,j,new} = ITW_{ICR,c,j} \times \mathrm{AF}_{ICR,c,j} \qquad (22)$$

where:

AF	as per below in (25),
$ITW_{c,j,new}$	the Individual Tenor Weights defined per component and Standard Constant Maturity as per Table CI. in Section 4.2.3. of the CMCI Technical Document.

3.1.3.2. Calculation of TWAFs for non curve rebalancing periods

In the case where the curve and price rebalancing frequencies do not remain identical (as a result of an adjustment made to the CMCI), the new TWAFs would be calculated as per the formula set forth below.

At the close of business on the day prior to the first maintenance day, using known settlement prices, we solve for TWAFs as the product of the Adjusting Factor (AF) and the Component Tenor Effective Weights (CTEW) for all eligible SCM and components in the CM-BCOM. We have:

$$TWAF_{ICR,c,j,new} = CTEW_{ICR,c,j} \times \mathrm{AF}_{ICR,c,j} \qquad (23)$$

$$CTEW_{ICR,c,j} = \frac{CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,j,t,t}}{\sum_{j=1,AT} CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,j,t,t}}, \qquad (24)$$

$$AF_{ICR,c,j} = \frac{CNW_{c,1,new} \times XDCMFP_{ICR,c,1,t,t}}{CNW_{c,j,new} \times XDCMFP_{ICR,c,j,t,t}}, \qquad (25)$$

where:

CTEW	is the Component Tenor Effective Weight,
$AF_{ICR,c,j}$	the Adjusting Factor for a given commodity Component c and SCM j.

The new TWAFs are solved for all commodity components in the CM-BCOM.

3.2. The CM-BCOM - Excess Return Index (CM-BCOM-ER)

3.2.1. Calculation during non maintenance periods

The CM-BCOM Excess Return Index is calculated for each CM-BCOM Business Day and represents the uncollateralized return of the CM-BCOM defined basket over time. The Index has the following expression:

$$CM-BCOM-ER_{ICR,t} = CM-BCOM-ER_{ICR,t-1} \times \left(1 + IDR_{ICR,t}\right) \qquad (26)$$

with:

$$IDR_{ICR,t} = \frac{CVF}{CVI} - 1 = \frac{CV_{ICR,t,t-1}}{CV_{ICR,t-1,t-1}} - 1 \qquad (27)$$

$$CVI = CV_{ICR,t-1,t-1} = \sum_{c=1,N} \left[\sum_{j=1,AT} IsIn_{c,j,Index} \times CNW_{c,j,SCM} \times TWAF_{c,j} \times XDCMFP_{ICR,c,j,t-1,t-1} \right] \qquad (28)$$

$$CVF = CV_{ICR,t,t-1} = \sum_{c=1,N} \left[\sum_{j,1,AT} IsIn_{c,j,Index} \times CNW_{c,j,SCM} \times TWAF_{c,j} \times XDCMFP_{ICR,c,j,t,t-1} \right] \qquad (29)$$

and where:

$IDR_{ICR,t}$	is the Index Daily Return, for a specified Currency reference (ICR) at time t.
CVF	is the Curve Value Final, calculated for an Index currency reference ICR, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,
CVI	is the Curve Value Initial, calculated for an Index currency reference ICR, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,
$XDCMFP_{ICR,c,j,t,t-1}$	is the Currency translated Daily Constant Maturity Forward Price, calculated for an Index currency reference ICR, for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1.
$IsIn_{c,j,Index}$	a binary constant with value 1 or 0 to indicate if the component c and the SCM j is a member of the Index being calculated.

CM-BCOM Excess Return Indices are set equal to 1000 on 29 January 2007.

3.2.2. Calculation during maintenance Periods

The Index Daily Return is defined as the percentage change in the CV of the CM-BCOM from one CM-BCOM Business Day to the next. It reflects the return that would have been realised by holding positions in the basket of Daily Constant Maturity Forward Price (DCMFP) to reflect each CNWs and TWAFs (or Weights and ITWs), from the closing of the trading platform on the prior CM-BCOM Business Day to the closing of the trading platform on the next CM-BCOM Business Day

The daily Rebalancing Proportions (RP) used to calculate CVI and CVF are identical to those used to calculate the CMCI Benchmark Price Index on the CM-BCOM Business Day immediately preceding the calculation date.

During a standard rebalancing period from the first to the last CM-BCOM Business Day of the rebalancing period we have:

$$CVI_{ICR,t-1,t-1} = \frac{MF_{ICR,old}}{MF_{ICR,new}} \times \left[\sum_{c=1,N} RP1_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,j,c,t-1,t-1} \right] \right] + \sum_{c=1,N} RP2_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,j,c,t-1,t-1} \right] \qquad (30)$$

and

$$CVF_{ICR,t-1,t-1} = \frac{MF_{ICR,old}}{MF_{ICR,new}} \times \left[\sum_{c=1,N} RP1_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,j,c,t,t-1} \right] \right]$$
$$+ \sum_{c=1,N} RP2_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,j,c,t,t-1} \right] \quad (31)$$

where RP1 and RP2 can take the following values.

$$RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\} \quad , \quad RP2_{c,t} = 1 - RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\}$$

3.3. The CM-BCOM – Total Return Index (CM-BCOM-TR)

3.3.1. Calculation of the Total Return Index

The CM-BCOM Total Return Index is derived from the CM-BCOM Excess Return Index. In addition to uncollateralized returns generated from the CM-BCOM basket, a daily fixed income return is added and the Index value takes the following expression:

$$CM - BCOM - TR_{ICR,T} = CM - BCOM - TR_{ICR,t} \times DITRF_{ICR,T} \quad (32)$$

Where

$$DITRF_{ICR,t} = \left(1 + IDR_{ICR,t} + IRR_{ICR,t}\right) \quad (33)$$

IRR, DRR, ARRA & ARRS, and calc days are defined in Section 2.3.1.

The fixed income return component of the Total Return Index reflects the interest earned on securities theoretically deposited as margin for hypothetical positions in the contracts comprising the Index.

CM-BCOM Total Return Indices are set to 1000 on 29 January 2007

3.3.2. Available Reference Rates

Please see Section 3.6.4 of the CMCI Technical Document, as incorporated by reference into this Technical Document, for the definition of Interest Rate Disruption Events.

4. The CM-BCOM Currency Hedged Indices (XMBCOM)

CM-BCOM Currency Hedged indices aim to facilitate CM-BCOM investment in currencies other than the US Dollar. These indices shield the notional investment of non USD based investors from variations in currency exchange rates.

The returns afforded by currency hedged indices are comparable to the returns offered by traditional quanto strategies, but any currency exchange positions are only hedged on a discrete basis therefore making these indices discrete quanto strategies and allowing a more direct comparison with their underlying US Dollar equivalent.

Currency Hedged indices are available in all major non-USD currencies in the traditional forms of Excess and Total Return indices.

All Currency Hedged indices are prefixed by the letter "X".

4.1. Currency Hedged Excess Return Indices

Currency Hedged Excess Return Indices are calculated as per the following formula:

$$XM-BCOM-ER_{ICR,SCM,t} = XM-BCOM-ER_{ICR,SCM,t-1} \times \left(1+\left(\frac{CM-BCOM-ER_{USD,SCM,t}}{CM-BCOM-ER_{ICR,SCM,t-1}}-1\right)\times\frac{\left(FX_{ICR,t-1}\right)^{CCYScalar_{ICR,USD}}}{\left(FX_{ICR,t}\right)^{CCYScalar_{ICR,USD}}}\right) \quad (35)$$

CM-BCOM-ER	the underlying USD CM-BCOM Excess Return Index (or Sub index) taken as a reference for the calculation of the uncollateralized commodity return
$FX_{ICR,t}$	is the currency exchange rate between the USD and the Index currency reference (ICR) for a given date t
t	is the CM-BCOM Business Day on which the calculation is made
$CCYScalar_{USD,CCY}$	is +1 or –1 (please see Table III in Section 3.4.2 of the CMCI Technical Document where, for the purposes hereof, references to CMCI and CMCI Business Day are replaced with references to CM-BCOM and CM-BCOM Business Days, respectively.)

XMBCOM Excess Return Indices are set equal to 1000 on 29 January 2007.

4.2. Currency Hedged Total Return Indices

Currency Hedged Total Return Indices are calculated as per the following formula:

$$XMCI-TR_{ICR,SCM,t} = XMCI-TR_{ICR,SCM,t-1} \times \left(1+\left(\frac{CM-BCOM-ER_{USD,SCM,t}}{CM-BCOM-ER_{ICR,SCM,t-1}}-1\right)\times\frac{\left(FX_{ICR,t-1}\right)^{CCYScalar_{ICR,USD}}}{\left(FX_{ICR,t}\right)^{CCYScalar_{ICR,USD}}}\right) \quad (36)$$

where:

IRR	Interest Rate Return, is the compounding factor calculated for each Index currency reference as defined in the core CMCI Technical Document

XMBCOM Total Return Indices are set equal to 1000 on 29 January 2007.

SCHEDULE 2

UBS Bloomberg SPGSCI Constant Maturity Commodity Index

Technical Document

The UBS Bloomberg SPGSCI Constant Maturity Index (for the purpose of this Technical Document "CMSP" or "Index") is a diversified commodity index that uses the S&P GSCI® weights and components with the UBS Bloomberg CMCI ("CMCI") constant maturity methodology of daily rolling and diversification beyond short term futures. This combination provides a unique balance between the widely followed, high energy weighted S&P GSCI® and the benefits of diversification across maturities and rolling methodology provided by the CMCI.

UBS Bloomberg SPGSCI Constant Maturity Index
(CMSP)

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Contents

Introduction

The S&P GSCI® commodity index remains the most widely used commodity index with a well-established commodity rolling methodology. The S&P GSCI® was designed to include only short term futures and rolls on a fixed time schedule once a month. However, as markets have developed and liquidity for longer dated contracts has improved, there are now many recognized benefits to considering a more diversified exposure across the commodity term structure and a different rolling mechanism.

These benefits include: (i) access to additional trading opportunities; (ii) lower volatility; (iii) closer matching of investment horizons; and (iv) the potential to mitigate negative roll yield. The UBS Bloomberg CMCI, launched in January 2007, addresses these opportunities and introduces two unique concepts to commodity index investment: (i) CMCI allows a more diversified exposure to the asset class by representing the commodity futures curve through a number of fixed constant maturities; (ii) and provides a more continuous exposure through the daily rolling of forward positions.

The UBS Bloomberg SPGSCI Constant Maturity Index ("CMSP") was developed in response to investor demand for an index with identical component weights to the widely used S&P GSCI®, but with a more diversified exposure to the forward curve and with access to the innovative calculation methodology introduced by the CMCI. CMSP allows investors to combine the above requirements in one index, which uses the exact commodity components and rebalancing methodology of the S&P GSCI®[1], but instead of rolling short term futures between the 5th and 9th business day of each month, CMSP uses the forward tenors, daily rolling and constant maturity methodology of the CMCI.

This combination provides a unique balance between the widely followed, high energy weighted S&P GSCI® and the benefits of diversification across maturities and rolling methodology provided by the UBS Bloomberg CMCI. The constant maturity approach and longer maturities that the UBS Bloomberg CMCI brings to the CMSP may lead to lower volatility and mitigation of negative roll yield while still keeping pace during periods of backwardation.

CMSP allows investors who want to continue to closely track the S&P GSCI® to benefit from the second generation index advantages introduced by the CMCI. Investors can trade CMSP either as a direct replacement for S&P GSCI® or through a long/short product benchmarked to the S&P GSCI. In the latter product, the performance removes the impact of index weightings and represents the difference in returns due to rolling methodologies and curve positioning.

A detailed explanation of CMCI and Constant Maturity methodology is outside of the scope of this Technical Document and is fully described in the CMCI Technical Document which can be downloaded from CMCI Website. Terms not otherwise defined herein shall have the meaning given to them in the CMCI Technical Document.

[1] The use of S&P GSCI® weights in the construction of CMSP index is licensed to UBS by Standard and Poors.

Summary of Index characteristics

General Characteristics

- The CMSP is a benchmark commodity forward curve product based on the methodology of the UBS Bloomberg CMCI Index Family[2] and the composition and rebalancing of the S&P GSCI®.
- The Index Administrator publishes four composite indices and one sub-index per commodity sector, all with identical component weights to the equivalent S&P GSCI® indices
- Arithmetic averaging in both the commodity and forward curve space.
- Price Index (PI), Excess Return (ER) and Total Return (TR) Indices are published daily.
- Each index is calculated in USD. Currency crossed and currency-hedged versions can also be made available in other major currencies on request.

Composition of the CMSP Index and Weightings

- CMSP uses all of the commodity components and their respective weights as they stand in the S&P GSCI®. As the weights of the CMSP will deviate from those of the S&P GSCI over time, a monthly rebalancing procedure is established, which take place over the CMSP Maintenance Period
- An equivalent CMCI component index has been created in respect of the S&P GSCI® components that are not present in the CMCI.
- Components of the S&P GSCI® that do not have an equivalent CMCI component have had their weights redistributed among components belonging to the same sector when calculating historical data for CMSP (see Appendix D – Historical Assumptions).
- CMSP Individual Tenor Weights (ITW) are inherited from the Individual Tenor Weights of the CMCI Benchmark Index.
- ITWs for components created specifically for CMSP have a constant maturity of three months at 100%.
- The CMSP re-balances monthly over the 5^{th} and the 9^{th} CMSP Business Day of the month ("Maintenance Period") and the weights are reset to the Individual Tenor Weights.
- CMSP Target Weights are rebalanced annually to the S&P GSCI weights defined on the 4^{th} S&P GSCI Business Day of January, consistent with S&P GSCI methodology
- Thereafter, the CMSP components are rebalanced monthly over the 5^{th} to 9^{th} CMSP Business Day of the month ("Maintenance Period") in order to match the S&P GSCI® weights as they stand on the 4^{th} S&P GSCI Business Day ("Effective Weights").

Effective Duration

- The average duration of the CMSP will change over time as the Individual Tenor Weights of the CMCI are adjusted periodically by the Index Administrator.

Bloomberg: Real time and settlement Index prices as well as important static data and related information are made available on Bloomberg page **CUBS <GO>**[3] (the "**Bloomberg Page**") Bloomberg Tickers for the CMSP USD Indices are constructed as shown in table I.

[2] The UBS Bloomberg CMCI Index family was launched in January 2007 to allow investors to manage the limitations of "nearby-only" Vehicles embodied by many major commodity indices and invest along the entire forward curve. (For more information on the UBS Bloomberg CMCI Index Family refer to the CMCI Technical Document.)

[3] Also see Reuters Pages UBSCMCI (the "**Reuters Page**")

TABLE I. BLOOMBERG TICKERS CONSTRUCTION

Sector/Component	CMSP Index Ticker	Index Type
Composite	CMSPCI	
Light Energy Ultra	CMSPLE	Excess Return = ER
Light Energy	CMSPUL	Total Return = TR
Reduced Energy	CMSPRE	Price Index = PI
Energy	CMSPEN	
Industrial Metals	CMSPIM	
Precious Metals	CMSPPM	
Agriculture	CMSPAG	
Livestock	CMSPLV	
Agriculture and Livestock	CMSPAL	

Source: UBS, Bloomberg

For other currencies and equivalent CMSP indices please refer to the Bloomberg Help functions.

Provisions incorporated by reference into this Technical Document

1. The third to ninth paragraphs (inclusive) of the Executive Summary section of the CMCI Technical Document are deemed to be incorporated into this Technical Document, subject to the following amendments:
   a. the words "Bloomberg Index Services Limited" is the index administrator of the CMSP (the "**Index Administrator**") and UBS AG is the owner of the CMSP ("**Index Owner**")." are inserted at the beginning of the third paragraph;

2. Section 2(Risk Factors) of the CMCI Technical Document is deemed to be incorporated into this TechnicalDocument.

3. The fifth, sixth, seventh, eighth, ninth and tenth paragraphs of section 1.1 of the CMCI Technical Document shall be deemed to be incorporated into this Technical Document.

4. Section 1.2 of the CMCI Technical Document shall be deemed to be incorporated by reference in this TechnicalDocument.

5. Sections 3.6.2, 3.6.3 and 3.6.4 of the CMCI Technical Document shall be deemed to be incorporated into this Technical Document.

6. Section 3.7 of the CMCI Technical Document shall be deemed to be incorporated into this Technical Document, subject to the following amendments:
   a. the words "(see formula (3), DCNP)" are replaced with "(see formula (3) of the CMCI Technical Document)";and
   b. the words "membership of a Component in the Index" are replaced with "membership of a component in the Index".

7. The following amendments are deemed to be made to all provisions incorporated into this Technical Document:
   a. references to "CMCI" are replaced with "CMSP";
   b. references to the "CMCI level" are replaced with "CMSP level"; and
   c. references to "the Bloomberg Page and/or the CMCI Website" are replaced with "the Bloomberg Page, the Reuters Page and/or the CMCI Website".

8. To the extent that any provision in the CMCI Technical Document incorporated by reference in this Technical Document conflicts with another provision in this Technical Document, the terms of the provision incorporated by reference in this Technical Document shall prevail.

1. Indexcomposition

Commodity weights and Individual Tenor Weights used in CMSP are a combination of S&P GSCI® commodity component weights (as they stand on the 4th S&P GSCI Business Day of each month) and CMCI Individual Tenor Weights.

1.1. CMSP Component Selection Process

The CMSP is designed to match the commodity components of the S&P GSCI®.

Where commodity components in the S&P GSCI® are identical to those in the CMCI, then the exact equivalent CMCI component is used.

Where a commodity component exists in S&P GSCI® but not in the CMCI, then a new CMCI component index will be created See Appendix C.

1.2. Determination of CMSP Target Weights

The CMSP Target Weight for each commodity component is set in January of each calendar year to be equivalent to the S&P GSCI weights defined on the 4th S&P GSCI Business Day of January, consistent with S&P GSCI methodology.

The CMSP Effective Weights are set monthly over the CMSP Maintenance Period to be equal to the weights of each equivalent commodity component in the S&P GSCI®, as they stand on the 4th S&P GSCI Business Day of the month in which the Maintenance Period takes place ("Effective Weights"). The CMSP commodity components are reset to their Effective Weights once a month during the Maintenance Period (defined as the period from the 5th to the 9th CMSP Business Day).

1.2.1 S&P GSCI® Effective Weights

The weight for each commodity component in the CMSP is equal to the weight of the equivalent commodity component of the S&P GSCI®. It is determined on the 4th S&P GSCI Business Day of the month using the Contract Production Weight (CPW) and the Daily Contract Reference Price of the Roll Contract Expiration (DCRP2) for the relevant component of the S&P GSCI®, as defined in the S&P GSCI technical document, available on http://www.spindices.com/commodities.

1.3. Determination of CMSP Individual Tenor Weights (ITWs)

The CMSP inherits its ITWs from the CMCI Benchmark Index. The CMCI ITWs are revised on an annual basis as part of the July CMCI Maintenance Periods.

In relation to commodity components created specifically for CMSP or those commodity components that are no longer part of the CMCI Benchmark Index, the ITWs are set at 100% for the 3 months constant maturity.

2. The CMSP Index Calculation Methodology

For each Index, the Index Administrator calculates and publishes three indices:

- The Price Index (CMSP-PI),
- The Excess Return (CMSP-ER),
- The Total Return (CMSP-TR).

All three series can be calculated for the following Standard Constant Maturities (SCM) upon request:

- 3 Months (3M),
- 6 Months (6M),
- 1 Year (12M),
- 2 Years (24M),
- 3 Years (36M).

2.1. The CMSP-Price Index (CMCI-PI)

For the purpose of the calculation of the CMSP, we differentiate the calculations taking place during CMSP Maintenance Periods and those performed during non-maintenance periods. These distinctions apply equally to the Price Index (PI), the Excess Return (ER) and Total Return (TR) indices. Maintenance periods take place each month and are used to rebalance the components of the $CMSP_{SCM}$ to their new CMSP Target or Effective Weights (together "Weights"), as discussed below in Section 2.2.

Maintenance Periods, which occur monthly, involve rebalancing of the Index components to new Weights. Non-maintenance periods refer to periods other than those in which a re-weighting takes place.

2.1.1. The Price Index during non-maintenance periods

The CMSP Price Index (CMSP-PI) is a representation of commodity price levels for a designated part of the forward curve and calculated on the basis of the prices of the CMCI Constant Maturity Forwards on the relevant commodities for the appropriate tenors.

During a non-maintenance period, the CMSP-PI calculated for a family of defined Standard Constant Maturities (SCM) is obtained by the multiplication of the Basket Value (BV) (which represents the value of a component or group of components of the CMSP) by the Maintenance Factor (MF). The Maintenance Factor is used to prevent any discontinuity of the price index associated with changes in nominal weights over time. For any non-maintenance days, BV is calculated for each component as the Sum of Daily Constant Maturity Forward Price (DCMFP) of each basket component multiplied by the respective Component Nominal Weight (CNW). The DCMFP are adjusted by price scalars reflecting reference foreign currency exchange rates versus, for example, the U.S. Dollar, such that all DCMFP are expressed in the same currency.

For non-maintenance days and, for example, on the USD index, we have:

$$CM-BCOM-PI_{USD,SCM,T} = MF_{SCM,USD}\sum_{C=1,N} DCV_{c,USD,SCM,t,t} = MF_{SCM,USD}\times BV_{USD,SCM,t,t}$$

and

$$DCV_{c,USD,SCM,t,t} = IsIn_{c,Index}\times DCMFP_{c,SCM,t,t}\times CNW_{c,SCM}\times\left[FX_{USD,c,t}\right]^{\text{CCYScalar}_{USD,ccy}} \qquad (2)$$

where:

$BV_{USD,SCM,t,t}$ is the Basket Value (i.e for any given index, the sum of Daily Component Value), $DCV_{c,USD,SCM,t,t}$ is the Daily Component Value calculated at time t,

$CNW_{c,SCM,t}$ is the Component Nominal Weight for a component c and for a specific Standard Constant Maturity(SCM),

$DCMFP_{c,SCM,t,t}$ is the Daily Constant Maturity Forward Price, for a component c and for a specific SCM, calculated at time t and with Contract Proportions taken at time t.

$FX_{USD,c,t}$ is the currency exchange rate between the quotation currency of the component instrument and the Index Currency Reference (ICR) in which the Index is expressed (here USD). For official settlement prices, the CMSP uses a direct or USD cross fixing price.

For the USD direct rate quotes, the price source is set to Bloomberg on page **CCY Curncy HP <GO>** (Note the Location Time zone is set to "New-York").

Cross rates are calculated (please see Appendix A in the CMCI Technical Document which shall apply to the CMSP as if references in such Appendix A to "CMCI" were references to "CMSP") so that the foreign exchange adjustment within the Index features no possible arbitrage.

$IsIn_{c,Index}$ a scalar factor with positive value, which allows to control the component c's Effective Weight in the calculated index.

$CCYScalar_{USD,CCY}$ is +1 or –1 (please refer to the CMCI Technical Document for details)

CMSP Price Indices are set equal to 1000 on 29 January 2007.

The reader will note that we use Spot currency rates in all cases. It is our opinion that the use of forward currency rates would alter significantly both the transparency and simplicity of the Index definitions without providing substantial benefit to the Index, as we see that returns on forward currency rates as being highly correlated with their spot rates.

Indices for each SCM are calculated in U.S. Dollars (USD). The CMSP FX price/rate sources are the same as the CMCI Index and can be found in the CMCI Technical Document.

2.1.2. Index continuity maintenance

As noted, the CMSP rebalances monthly into new CMSP Weights which implies new Component Nominal Weights (CNWs) and Maintenance Factors (MFs) for each month.

On the day before the start of the Maintenance Period, the CMSP is calculated based on the old CNWs (reflecting old Weights) and MFs used so far in the calculation.

The first part of the formula is then adjusted for the Maintenance Factor changes, and multiplied by the Basket Value Ratio (BVR) which reflects the change in the Basket Value resulting from the shift from the Old to the New Weights and therefore also to the new CNWs.

The process also applies to all maintenance periods. During maintenance periods, the calculation formula for BV is:

$$BV_{ICR,SCM,t,t} = MF_{ICR,old} / MF_{ICR,new} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,old} \times RP1_{c,t} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{CCYScalar_{ICR,ccy}} \right] + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,new} \times RP2_{c,t} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{CCYScalar_{ICR,ccy}} \quad , \quad (3)$$

where

$RP1_{c,t}$ and $RP2_{c,t}$ the rebalancing proportions for component c, at calculation date t. RP1 and RP2 are the factors that relate to the weight on each day of the Maintenance Period over which the Index goes from Old to New CNWs and MFs.

RP1 and RP2 take the following values

$$RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\} \quad , \quad RP2_{c,t} = 1 - RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\} \quad (4)$$

New Maintenance Factors are calculated at the close of business on the CMSP Business Day immediately preceding the first maintenance day, and their values used for subsequent calculations:

$$BVR_{ICR,SCM,t,t} = \frac{\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{CCYScalar_{ICR,ccy}}}{\sum_{c=1,N} IsIn_{c,Index} \times CNW_{c,SCM,old} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t} \right]^{CCYScalar_{ICR,ccy}}}, \quad (5)$$

Where BVR is the Basket Value Ratio. We then obtain:

$$MF_{ICR,SCM,new} = \frac{MF_{ICR,SCM,old}}{BVR_{ICR,SCM,t,t}}, \quad (6)$$

TABLE I. STANDARD REBALANCING PERIOD, CALCULATION OF REBALANCING PROPORTIONS

Theoretical Schedule				First day	Second day	Third day	Fourth day	Last day		
Index	\ bday	Mar05	Mar06	Mar07	Mar10	Mar11	Mar12	Mar13	Mar14	Mar15
PI	RP1	1.00	1.00	0.80	0.60	0.40	0.20	0.00	1.00	1.00
	RP2	0.00	0.00	0.20	0.40	0.60	0.80	1.00	0.00	0.00
ER	RP1	1.00	1.00	1.00	0.80	0.60	0.40	0.20	0.00	1.00
	RP2	0.00	0.00	0.00	0.20	0.40	0.60	0.80	1.00	0.00

Source: UBS, Bloomberg

2.1.3. The Index rebalancing mechanism and the calculation of the CNWs

As noted above, the CMSP is rebalanced monthly to new Weights (as specified in Section 1.2) during each maintenance period. The process is automatic and is implemented via a pre-defined algorithm.

The calculation of the new CNWs is effected monthly, at the close of business on the CMCI Business Day immediately preceding the first day of the CMSP Maintenance Period (i.e. the fourth business day of the month).

On that day, the new CNWs are calculated such that the CMSP weights match the Effective Weights of the S&P GSCI, as defined at the close of business on the day prior to the first day of the Maintenance Period. On this day we solve for CNWs using known settlement prices.

Without loss of generality, we define $CNW_{N,SCM,new} = x$ as an arbitrary constant.

For all components in the composite index, we then solve for:

$$\frac{CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}}}{\sum_{c=1,N} CNW_{c,SCM,new} \times DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}}} - TW_{c,\%} = 0 \qquad (7)$$

Also note that:

$$TW_1 + \ldots + TW_N = 1$$

For notation purposes, one introduces currency denominated quantities:

$$XDCMFP_{ICR,c,SCM,t,t} = DCMFP_{c,SCM,t,t} \times \left[FX_{ICR,c,t}\right]^{\text{CCYScalar}_{\text{ICR,ccy}}} \quad (8)$$

$$XDCMFP_c = XDCMFP_{ICR,c,SCM,t,t} \quad (9)$$

As shown in Appendix C to the CMCI Technical Document where, for the purposes hereof, references to the CMCI are replaced with references to CMSP, this system has the following analytic solution:

$$\begin{aligned}
CNW_{ICR,1,SCM,new} &= \frac{TW_1 . XDCMFP_N}{TW_N . XDCMFP_1} x \\
CNW_{ICR,2,SCM,new} &= \frac{TW_2 . XDCMFP_N}{TW_N . XDCMFP_2} x \\
CNW_{ICR,3,SCM,new} &= \frac{TW_3 . XDCMFP_N}{TW_N . XDCMFP_3} x \\
&\cdot \quad \cdot \quad \cdot \\
CNW_{ICR,N,SCM,new} &= x
\end{aligned} \qquad (10)$$

Once new CNWs are calibrated for each SCM, the Maintenance Factors (MF) for each index are calculated as per (6)above, and the CNWs are made available for the calculation of the composite indices as well all commodity sector and single component indices that exist in the CMSP family.

2.2. The CMSP Excess Return (CMSP-ERS)

2.2.1. Calculation during non-maintenance periods

The CMSP Excess Return Index is calculated on each CMSP Business Day and represents the uncollateralized return of the CMSP basket over time, and for one specific SCM. The Index has the following expression:

$$CM-BCOM-ER_{SCM,t} = CM-BCOM-ER_{SCM,t-1} \times (1+IDR_{SCM,t}) \quad (11)$$

with:

$$IDR_{SCM,t} = \frac{BVF}{BVI} - 1 = \frac{BV_{SCM,t,t-1}}{BV_{SCM,t-1,t-1}} - 1 \quad (12)$$

$$BVI = BV_{ICR,SCM,t-1,t-1} = \sum_{c=1,N} XDCMFP_{ICR,c,SCM,t-1,t-1} \times CNW_{c,SCM} \times IsIn_{c,Index}$$

$$BVF = BV_{ICR,SCM,t,t-1} = \sum_{c=1,N} XDCMFP_{ICR,c,SCM,t,t-1} \times CNW_{c,SCM} \times IsIn_{c,Index}$$

And where:

$IDR_{ICR,SCM,t}$	is the Index Daily Return, for a specified Index Currency Reference (ICR) and Standard Constant Maturity at time t.
BVF	is the Basket Value Final, calculated for an Index currency reference ICR, a Standard Constant Maturity SCM, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,
BVI	is the Basket Value Initial, calculated for an Index currency reference ICR, a Standard Constant Maturity SCM, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,
$XDCMFP_{ICR,c,SCM,t,t-1}$	is the currency translated Daily Constant Maturity Forward Price, calculated for an Index currency reference ICR, a Standard Constant Maturity SCM, for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1 (as defined in Section2.1.3.).
$IsIn_{c,Index}$	a scalar factor with positive value, which allows to control the component c's effective weight in the calculated index.

CMSP Excess Return Indices are set equal to 1000 on 29 January 2007

2.2.2. Calculation during maintenance periods

The Index Daily Return is defined as the percentage change in the BV of the CMSP from one CMSP Business Day to the next. It reflects the return that would have been realized by holding positions in the DCMF to reflect the CNWs (TWs), from the closing of the trading platform on the prior CMSP Business Day to the closing of the trading platform on the next CMSP Business Day.

The daily Rebalancing Proportions (RP) used to calculate BVI and BVF are identical to those used to calculate the CMSP Price Index on the CMSP Business Day immediately preceding the calculation date. During a standard rebalancing period from the first to the last CMSP Business Day of the rebalancing period we have:

$$BVI_{ICR,SCM,t-1,t-1} = MF_{ICR,SCM,old} / MF_{ICR,SCM,new} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,old} \times RP1_{c,t-1} \times XDCMFP_{ICR,SCM,c,t-1,t-1} \right] + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,new} \times RP2_{c,t-1} \times XDCMFP_{ICR,SCM,c,t-1,t-1} \quad (13)$$

and

$$BVF_{ICR,SCM,t,t-1} = MF_{ICR,SCM,old} / MF_{ICR,SCM,new} \times \left[\sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,old} \times RP1_{c,t-1} \times XDCMFP_{ICR,SCM,c,t,t-1} \right] + \sum_{c=1,N} IsIn_{c,Index} \times CNW_{SCM,c,new} \times RP2_{c,t-1} \times XDCMFP_{ICR,SCM,c,t,t-1} \quad (14)$$

where RP1 and RP2 take the following values

$RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\}$, $RP2_{c,t} = 1 - RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\}$

2.3. The CMSP SCM-Total Return (CMSP-TR)

2.3.1. Calculation of the Total Return Index

CMSP-TR is derived from the CMSP Excess Return Index. In addition to uncollateralized returns generated from the CMSP basket, a daily fixed income return is added and the Index value takes the following expression:

$$CM - BCOM - TR_{ICR,SCM,t} = CM - BCOM - TR_{ICR,SCM,t-1} \times DITRF_{ICR,SCM,t-1} \quad (15)$$

Where:

$$DITRF_{ICR,SCM,t} = \left(1 + IDR_{ICR,SCM,t} + IRR_{ICR,t}\right) \quad (15b)$$

IRR — **Interest Rate Return** is the compounding factor calculated for each Index currency reference,

DRR — **Daily Reference Rate** is a function of the rate available on the immediately Preceding CMSP Business Day (ARR), the ARRA and ARRS. The form of the Compounding expression is a function of the Index Currency Reference (ICR) Defined below, and DRR takes the following form:

$$DRR_{ICR,t} = ARRS_{ICR,t} \times ARR_{ICR,t} + ARRA_{ICR,t} \quad (16)$$

ARRA & ARRS — **Available Reference Rate Adjustment and Available Reference Rate Scalar** are respectively the rate adjustment and scalar factor used - when applicable - to reflect any particular funding cost or rate differential applicable and associated to an ICR for an AA+/AAA (S&P) and/or AA1/AAA (Moodys) issuer. The ARRA and ARRS can change periodically in accordance with changes made to such rates in the CMCI.

"caldays" — is the integer number of calendar days from the previous CMSP Business Day to the CMSP Business Day on which the calculation is made.

The fixed income return component of the Total Return Index reflects the interest earned on securities theoretically deposited as margin for hypothetical positions in the contracts comprising the Index.

CMSP Total Return Indices are set equal to 1000 on 29 January 2007.

2.3.2. Available Reference Rates

Please see Section 3.4.2 of the CMCI Technical Document for the definition of the Available Reference Rates and Section 3.6.4 of the CMCI Technical Document, as incorporated by reference into this Technical Document, for the definition of Interest Rate Disruption Events.

2.4. CMSP Business Day Conventions

2.4.1. CMSP Business Day definition

A CMSP Business Day shall be deemed to be any day which is a CMCI Business Day (See Section 3.6 of the CMCI Technical Document), provided that the Maintenance Period applicable to the CMSP shall have the meaning given to this term in Section 1.2 (*Determination of CMSP Target Weights*) above.

3. Construction of the CMSP Benchmark Index

The CMSP is based on the CMCI Benchmark Index, and strictly respects the original CMCI calculation mechanism and benchmark composition regarding Individual Tenor Weights (ITW). However, Target Weights in the CMSP Index are taken from the S&P GSCI®

The CMSP uses the same curve rebalancing mechanism available for the CMCI Benchmark Index. The curve rebalancing is a procedure designed to provide additional weight control over the fluctuations of the structures of forward curves.

The following section provides a detailed explanation for the calculation of:

- The CMSP Price Index (CMSP-PI);
- The CMSP Excess Return Index (CMSP-ER); and
- The CMSP Total Return Index (CMSP-TR).

3.1. The CMSP - Price Index (CMSP-PI)

For the purpose of the calculation of the CMSP, we differentiate the calculations taking place during rebalancing periods, or maintenance periods, and those performed during non-rebalancing periods, or non-maintenance periods. These distinctions apply equally to the CMSP Price Index (PI), the Excess Return (ER) and Total Return (TR) indices.

Components maintenance periods take place each month and are used to rebalance the CMSP exposure to the effective weights of the S&P GSCI®, as discussed below in Section 3.1.2. Curve rebalancing periods also take place each month during the CMSP Maintenance Period and are used to rebalance the CMSP exposure to the respective segments of the forward curve to their respective Individual Tenor Weights (ITW), as discussed below in Section 3.1.3. Non-maintenance periods refer to periods other than those in which a rebalancing or re-weighting takes place.

3.1.1. The Price Index during non-maintenance periods

The CMSP Price Index (CMSP-PI) is a representation of commodity price levels for a designated segment forward curve and calculated on the basis of the prices of the Constant Maturity Forwards on the relevant commodities as defined in the CMCI Technical Document.

During non-maintenance periods, the CMSP-PI is obtained by the multiplication of the Curve Value (CV) (which represents the value of the tradable forward curve for a component or group of components of the Index) by the Maintenance Factor (MF). The Maintenance Factor, unique to each index (i.e. a function of each basket composition), is used to prevent any discontinuity of the price index associated with changes in nominal weights over time.

For any non-maintenance days, CV is calculated for each component as the sum of Curve Component Values, which, in turn, is equal to the sum, for each Standard Constant Maturity (SCM), of Daily Constant Maturity Forward Price (DCMFP) multiplied by the respective Component Nominal Weight (CNW) and by the respective Tenor Weight Adjustment Factors (TWAF). The DCMFP are adjusted by price scalars reflecting reference foreign currency exchange rates versus the Reference Currency (ICR), such that all DCMFP are all expressed in the same currency.

For non-maintenance days we have:

$$CM - BCOM - PI_{ICR,t} = MF_{ICR} \times CV_{ICR,t,t} = MF_{ICR} \times \sum_{c=1,N} CCV_{c,ICR,t,t} \quad (26)$$

and

$$CCV_{c,ICR,t,d} = \sum_{j=1,AT} IsIn_{c,j,Index} \times CNW_{c,j} \times TWAF_{c,j} \times DCMFP_{c,j,t,d} \times \left[FX_{ICR,c,t}\right]^{CCYScalar_{ICR,ccy}} \quad (18)$$

where:

$CV_{ICR,t,t}$	is the Curve Value (i.e for any given index, the sum of Curve Component Value), $CCV_{c,ICR,t,t}$ is the Curve Component Value for a component c calculated at time t,
$CNW_{c,j}$	is the Component Nominal Weight for a component c and a Standard Constant Maturity j,
$TWAF_{c,j}$	is the Tenor Weight Adjusting Factor for a component c and a Standard Constant Maturity j,
$DCMFP_{c,j,t,t}$	is the Daily Constant Maturity Forward Price, for a component c and for a SCM j calculated at time t and with Contract Proportions taken at time t.
$FX_{ICR,c,t}$	is the currency exchange rate between the quotation currency of the component instrument and the Index currency reference (ICR) in which the Index is expressed, as per the CMCI Technical Document.
$IsIn_{c,j,Index}$	a binary constant with value 1 or 0 to indicate if the component c and SCM j is a member of the CMCI Index being calculated (note if $IsIn_{c,Index}$=0 then all $IsIn_{c,j,Index}$=0),
AT	is the number of available Tenors for a component c,
$CCYScalar_{ICR,CCY}$	is +1 or –1, with ICR the Index Currency Reference and ccy the quotation currency of the underlying asset of futures contract.

Further, we simplify notations by introducing XDCMFP as the currency converted DCMFP. We have:

$$XDCMFP_{ICR,c,j,t,d} = DCMFP_{c,j,t,d} \times \left[FX_{ICR,c,t}\right]^{CCYScalar_{ICR,ccy}} \quad (18a)$$

CMSP Benchmark Price Indices were set to 1000 on 29 January 2007.

3.1.2. Index continuity maintenance

The Individual Tenor Weights (ITWs) of the CMSP are rebalanced on a monthly basis during the CMSP Maintenance Period. The monthly re-weighting events together with the rebalancing then automatically trigger the recalculation, for each Standard Constant Maturity, of new Component Nominal Weights (CNWs) as well as new Target Weight Adjustment Factors (TWAFs).

CMSP rebalances its forward curve exposure every month. The curve rebalancing mechanism is independent from the component rebalancing or re-weighting mechanism.

On the day before the start of the maintenance period, the CMSP is calculated based on the old CNWs (reflecting old Weights), old TWAFs and old MFs used so far in the calculation.

The first part of the formula is then adjusted for the Maintenance Factor changes, and multiplied by the Curve Value Ratio (CVR) which reflects the change in the Curve Value resulting from the shift from the Old to the New CNWs and TWAFs.

The process also applies to all CMSP Maintenance Periods. During the Maintenance Periods, the calculation

formula for CV is:

$$CV_{ICR,SCM,t,t} = \frac{MF_{ICR,old}}{MF_{ICR,new}}\left[\sum_{c=1,N} RP1_{c,t}\left[\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,j,t,t}\right]\right]$$
$$+\left[\sum_{c=1,N} RP2_{c,t}\left[\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,c,j,t,t}\right]\right], \quad (19)$$

where:

$RP1_{c,t}$ and $RP2_{c,t}$ the rebalancing proportions for component c, at calculation date t (as defined below).

New Maintenance Factors are calculated at the close of business on the CMSP Business Day immediately preceding the first maintenance day, and their values used for subsequent calculations:

$$CVR_{ICR,t,t} = \frac{\sum_{c=1,N}\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,c,SCM,t,t}}{\sum_{c=1,N}\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,SCM,t,t}}, \quad (20)$$

Where CVR is the Curve Value Ratio. We then obtain:

$$MF_{ICR,new} = \frac{MF_{ICR,old}}{CVR_{ICR,t,t}}, \quad (21)$$

Market Disruption Events are dealt with in the procedures set forth in Sections 3.6.2, 3.6.3, 3.6.4 and 3.6.5 of the CMCI Technical Document, as incorporated by reference into this Technical Document.

3.1.3. The Index Curve rebalancing mechanism and the calculation of TWAFs

The CMSP rebalances monthly in order to rebalance the positions held on each of the respective Standard Constant Maturities or Tenors.

This rebalancing is necessitated by the fact that the index weightings are in part based on the prices of each of the constituent constant maturity forward prices and naturally over-weights the best performing tenors and under-weights the worst performing ones. As market prices fluctuate, the effective weights of the constituent tenors "drift" from their initial weights. As a result, it is necessary to re-balance the curves periodically to maintain their original weightings

This is accomplished by rebalancing the Individual Tenor Weights (ITW) during each curve maintenance period. The process is automatic and is implemented via a pre-defined algorithm. The calculation of the new TWAFs is effected monthly, at the close of business on the business day immediately preceding the first rebalancing day (i.e. the fourth to last business day of the month).

On that day, the new TWAFs are calculated such that the effective ITWs match the ITWs defined for the next period (for curve rebalancing periods), or Component Tenor Effective Weights (CTEW) for the current period (for non curve rebalancing periods).

3.1.3.1. Calculation of TWAFs for curve rebalancing periods

At the close of business on the day prior to the first maintenance day, using known settlement prices, we solve for TWAFs as the product of the Adjusting Factor (AF) and the Individual Tenor Weights (ITW).

$$TWAF_{ICR,c,j,new} = ITW_{ICR,c,j} \times \mathrm{AF}_{ICR,c,j} \quad (22)$$

Where:

AF as per below in (25),

$ITW_{c,j,new}$ the Individual Tenor Weights defined per component and Standard Constant Maturity per Table CI. in Section 4.2.3. of the CMCI Technical Document.

3.1.3.2. Calculation of TWAFs for non-curve rebalancing periods

In the case where the curve and price rebalancing frequencies do not remain identical (as a result of an adjustment made to the CMCI), the new TWAFs would be calculated as per the formula set forth below.

At the close of business on the day prior to the first maintenance day, using known settlement prices, we solve for TWAFs as the product of the Adjusting Factor (AF) and the Component Tenor Effective Weights (CTEW) for all eligible SCM and components in the CMSP. We have:

$$TWAF_{ICR,c,j,new} = CTEW_{ICR,c,j} \times \mathrm{AF}_{ICR,c,j} \qquad (23)$$

$$CTEW_{ICR,c,j} = \frac{CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,j,t,t}}{\sum_{j=1,AT} CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,c,j,t,t}}, \qquad (24)$$

$$AF_{ICR,c,j} = \frac{CNW_{c,1,new} \times XDCMFP_{ICR,c,1,t,t}}{CNW_{c,j,new} \times XDCMFP_{ICR,c,j,t,t}}, \qquad (25)$$

where:

CTEW is the Component Tenor Effective Weight,

$AF_{ICR,c,j}$ the Adjusting Factor for a given commodity Component c and SCM j.

The new TWAFs are solved for all commodity components in the CMSP.

3.2. The CMSP - Excess Return Index (CMSP-ER)

3.2.1. Calculation during non-maintenance periods

The CMSP Excess Return Index is calculated on each CMSP Business Day and represents the uncollateralized return of the CMSP basket over time. The Index has the following expression:

$$CM-BCOM-ER_{ICR,t} = CM-BCOM-ER_{ICR,t-1} \times \left(1 + IDR_{ICR,t}\right) \qquad (26)$$

and

$$IDR_{ICR,t} = \frac{CVF}{CVI} - 1 = \frac{CV_{ICR,t,t-1}}{CV_{ICR,t-1,t-1}} - 1 \qquad (27)$$

$$CVI = CV_{ICR,t-1,t-1} = \sum_{c=1,N} \left[\sum_{j=1,AT} IsIn_{c,j,Index} \times CNW_{c,j,SCM} \times TWAF_{c,j} \times XDCMFP_{ICR,c,j,t-1,t-1} \right] \qquad (28)$$

$$CVF = CV_{ICR,t,t-1} = \sum_{c=1,N} \left[\sum_{j,1,AT} IsIn_{c,j,Index} \times CNW_{c,j,SCM} \times TWAF_{c,j} \times XDCMFP_{ICR,c,j,t,t-1} \right] \qquad (29)$$

where:

$IDR_{ICR,t}$ is the Index Daily Return, for a specified currency reference (ICR) at time t.

CVF — is the Curve Value Final, calculated for an Index currency reference ICR, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,

CVI — is the Curve Value Initial, calculated for an Index currency reference ICR, and for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1,

$XDCMFP_{ICR,c,j,t,t-1}$ — is the Currency translated Daily Constant Maturity Forward Price, calculated for an Index currency reference ICR, for a reference calculation date t, with Contract Proportions (CPs) taken at reference calculation time t-1.

$IsIn_{c,j,Index}$ — a binary constant with value 1 or 0 to indicate if the component c and the SCM j is a member of the Index being calculated.

CMSP Excess Return Indices are set equal to 1000 on 29 January 2007

3.2.2. Calculation during maintenance Periods

The Index Daily Return is defined as the percentage change in the CV of the CMSP from one CMSP Business Day to the next. It reflects the return that would have been realised by holding positions in the basket of Daily Constant Maturity Forward Price (DCMFP) to reflect each CNWs and TWAFs (or TWs and ITWs), from the closing of the trading platform on the prior CMSP Business Day to the closing of the trading platform on the next CMSP Business Day.

The daily Rebalancing Proportions (RP) used to calculate CVI and CVF are identical to those used to calculate the CMCI Benchmark Price Index on the CMSP Business Day immediately preceding the calculation date.

During a standard rebalancing period from the first to the last CMSP Business Day of the rebalancing period we have:

$$CVI_{ICR,t-1,t-1} = \frac{MF_{ICR,old}}{MF_{ICR,new}} \times \left[\sum_{c=1,N} RP1_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,j,c,t-1,t-1} \right] \right] + \sum_{c=1,N} RP2_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,j,c,t-1,t-1} \right] \quad (30)$$

and

$$CVF_{ICR,t-1,t-1} = \frac{MF_{ICR,old}}{MF_{ICR,new}} \times \left[\sum_{c=1,N} RP1_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,old} \times CNW_{c,j,old} \times TWAF_{c,j,old} \times XDCMFP_{ICR,j,c,t,t-1} \right] \right] + \sum_{c=1,N} RP2_{c,t-1} \left[\sum_{j=1,AT} IsIn_{c,j,Index,new} \times CNW_{c,j,new} \times TWAF_{c,j,new} \times XDCMFP_{ICR,j,c,t,t-1} \right] \quad (31)$$

where RP1 and RP2 can take the following values.

$$RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\} \quad , \; RP2_{c,t} = 1 - RP1_{c,t} = \{0.0, 0.2, 0.4, 0.6, 0.8, 1.0\}$$

3.3. The CMSP – Total Return Index (CMSP-TR)

3.3.1. Calculation of the Total Return Index

The CMSP Total Return Index is derived from the CMSP Excess Return Index. In addition to uncollateralized returns generated from the CMSP basket, a daily fixed income return is added and the

Index value takes the following expression:

$$CMSP - \mathrm{TR}_{ICR,t} = \mathrm{CMSP} - \mathrm{TR}_{ICR,t-1} \times DITRF_{ICR,t} \quad (32)$$

where:

$$DITRF_{ICR,t} = \left(1 + IDR_{ICR,t} + IRR_{ICR,t}\right) \quad (33)$$

IRR, DRR, ARRA & ARRS, and calcdays are defined in Section 2.3.1.

The fixed income return component of the Total Return Index reflects the interest earned on securities theoretically deposited as margin for hypothetical positions in the contracts comprising the Index.

CMSP Total Return Indices are set to 1000 on 29th Jan 2007.

3.3.2. Available Reference Rates

Please see Section 3.6.4 of the CMCI Technical Document, as incorporated by reference into this Technical Document, for the definition of Interest Rate Disruption Events.

4. The CMSP Currency Hedged Indices (XMSP)

CMSP Currency Hedged indices aim to facilitate CMSP investment in currencies other than the US Dollar. These indices shield the notional investment of non USD based investors from variations in currency exchange rates.

The returns afforded by currency hedged indices are comparable to the returns offered by traditional quanto strategies, but any currency exchange positions are only hedged on a discrete basis therefore making these indices discrete quanto strategies and allowing a more direct comparison with their underlying US Dollar equivalent.

Currency Hedged indices are available in all major non-USD currencies in the traditional forms of Excess and Total Return indices.

All Currency Hedged indices are prefixed by the letter "X".

4.1. Currency Hedged Excess Return Indices

Currency Hedged Excess Return Indices are calculated as per the following:

$$XMSP - ER_{ICR,SCM,t} = XMSP - ER_{ICR,SCM,t-1} \times \left(1 + \left(\frac{CMSP - ER_{USD,SCM,t}}{CMSP - ER_{ICR,SCM,t-1}} - 1\right) \times \frac{\left(FX_{ICR,t-1}\right)^{CCYScalar_{ICR,USD}}}{\left(FX_{ICR,t}\right)^{CCYScalar_{ICR,USD}}}\right) \quad (35)$$

where:

CMSP-ER	the underlying USD CMSP Excess Return Index (or Sub index) taken as a reference for the calculation of the uncollateralized commodity return
$FX_{ICR,t}$	is the currency exchange rate between the USD and the Index currency reference (ICR) for a given date t
t	is the CMSP Business Day on which the calculation is made $CCYScalar_{USD,CCY}$ is +1 or –1 (please see Table III in Section 3.4.2 of the CMCI Technical Document where, for the purposes hereof, references to CMCI and CMCI Business Day are replaced with references to CMSP and CMSP Business Days, respectively.)

XMSP Excess Return Indices are set equal to 1000 on 29 January 2007.

4.2. Currency Hedged Total Return Indices

Currency Hedged Total Return Indices are calculated as per the following formula:

$$XMCI - TR_{ICR,SCM,t} = XMCI - TR_{ICR,SCM,t-1} \times \left(1 + \left(\frac{CMSP - ER_{USD,SCM,t}}{CMSP - ER_{ICR,SCM,t-1}} - 1 \right) \times \frac{\left(FX_{ICR,t-1}\right)^{CCYScala_{ICR,USD}}}{\left(FX_{ICR,t}\right)^{CCYScala_{ICR,USD}}} + IRR_{ICR,t} \right) \quad (36)$$

where:

IRR	Interest Rate Return, is the compounding factor calculated for each Index currency reference

XMSP Total Return Indices are set equal to 1000 on 29 January 2007.