



**INDICES**

A Bloomberg Professional Service Offering

# **INDEX METHODOLOGY**

**The Bloomberg Commodity Index Family**

**Bloomberg**



The data and information (the "Information") presented in this methodology (this "Methodology") reflect the methodology for determining the composition and calculation of the Bloomberg Commodity Index ("BCOM" or the "Index") and related sector, ex-sector, forward, roll select and currency-hedged Bloomberg Commodity Indices (the "Subindices"), which is published by UBS Securities LLC (collectively with its affiliates, "UBS") together with Bloomberg Finance L.P. (collectively with its affiliates, "Bloomberg" and together with UBS, the "Index Providers"). This Methodology, the Information and the Index were acquired by UBS in May 2009 and remain UBS's exclusive property. This Methodology is the successor document to the *Dow Jones-UBS Commodity Index Handbook* published in prior years and replaces it in its entirety.

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- Each of the Forward Month BCOM and BCOMTR names set forth in Appendix J
- Each of the index names set forth in Appendix L or Appendix M



**NOTABLE CHANGES IN THE INDEX METHODOLOGY**

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

**Changes in the October 2016 Index Methodology**

- Section 1.3 was updated to reflect the changes to Bloomberg’s index governance structure.

**Changes in the December 2016 Index Methodology**

- Section 3.3 was updated with the handling of Market Disruption Events (MDE) on the BCOM Commodity Index Multiplier (CIM) Determination Date.

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# THE BLOOMBERG COMMODITY INDEX

*Certain defined terms used in this Methodology are described in Appendix A.*

## Chapter 1. OVERVIEW OF THE INDEX

### Section 1.1. Introduction

The Bloomberg Commodity Index (“BCOM” or the “Index”) is designed to be a highly liquid and diversified benchmark for commodities investments. The principal potential benefits of including commodities in a diversified financial portfolio include:<sup>1</sup>

- Positive returns over time
- Low correlation with equities and fixed income

BCOM provides broad-based exposure to commodities as an asset class, since no single commodity or commodity sector dominates the Index. Rather than being driven by micro-economic events affecting one commodity market or sector, the diversified commodity exposure of BCOM potentially reduces volatility in comparison with non-diversified commodity baskets.

#### Representativeness

The indices use a consistent, systematic process to represent the commodity markets. A commodity index should fairly represent the importance of a diversified group of commodities to the world economy. To achieve a fair representation, BCOM uses both liquidity data and U.S.-dollar-weighted production data in determining the relative quantities of included commodities. BCOM Index purports to provide diversified exposure to commodities as an asset class. The explicit inclusion of liquidity as a weighting factor helps to ensure that BCOM can accommodate substantial investment flows.

The Index was created by AIG International Inc. in 1998 and acquired by UBS in May 2009, at which time UBS and Dow Jones entered into an agreement (the “Joint Marketing Agreement”) to jointly market the Index. The Joint Marketing Agreement with Dow Jones was terminated in 2014 as UBS entered into a Commodity Index License Agreement (the “CILA”) with Bloomberg. Pursuant to the CILA, Bloomberg, on behalf of UBS, calculates BCOM (which is calculated on an excess return basis), a total return index based on BCOM (the “BCOMTR”) and each of the related indices and Subindices described in this Methodology.<sup>2</sup>

This Methodology describes the calculation methodology for the Index and its related indices and Subindices. Material changes or amendments to this Methodology are subject to approval by the Bloomberg Index Oversight Committee (further described in Section 1.3) in consultation, if practicable, with UBS, except during periods of extraordinary circumstances, such as during a market emergency. Questions and issues relating to the application and interpretation of terms contained in this document generally and calculations during periods of extraordinary circumstances in particular will be resolved or determined by Bloomberg in consultation, if practicable, with UBS.

Throughout this Methodology, references to “BCOM” and “Index” shall also refer to its related indices and Subindices, except if the context does not so require.



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1. See, e.g., E. Ankrim, and C. Hensel C., “Commodities in Asset Allocation: A Real-Asset Alternative to Real Estate,” *Financial Analysts Journal*, May/June 1993: 20–29; K. Froot, “Hedging Portfolios with Real Assets,” *Journal of Portfolio Management* Summer 1995: 60–77; G. Huberman, “The Desirability of Investment in Commodities via Commodities Futures,” *Derivatives Quarterly*, Fall 1995: 65–67.

2. Values of BCOM, BCOMTR and related indices and Subindices are currently distributed by various major market data vendors.



## Section 1.2. CONSTRUCTION OF THE BLOOMBERG COMMODITY INDEX

The value of the Index is computed on the basis of hypothetical investments in the basket of commodities that make up the Index. The Index embodies four main principles in its design:

- Economic Significance
- Diversification
- Continuity
- Liquidity

### (1) Economic Significance

A commodity index should fairly represent the importance of a diversified group of commodities to the world economy. To achieve a fair representation, BCOM uses both liquidity data and U.S.-dollar-weighted production data in determining the relative quantities of included commodities.

BCOM primarily relies on liquidity data, or the relative amount of trading activity of a particular commodity, as an important indicator of the value placed on that commodity by financial and physical market participants. BCOM also relies on production data as a useful measure of the importance of a commodity to the world economy. Production data alone, however, may underestimate the economic significance of storable commodities (e.g., gold) at the expense of relatively non-storable commodities (e.g., live cattle). Production data alone may also underestimate the investment value that financial market participants place on certain commodities and/or the amount of commercial activity that is centered around various commodities. Accordingly, production statistics alone do not necessarily provide as accurate a reflection of economic importance as the pronouncements of the markets themselves. BCOM thus relies on data that is both endogenous to the futures markets (liquidity) and exogenous to the futures markets (production) in determining relative weightings.

Gold clearly illustrates the potential shortcomings of exclusive reliance on production data and the greater balance provided by reliance on liquidity data. Since time immemorial, gold has played a unique role in the world of commodities that is not effectively captured by current production data. For example, although only 2,340 metric tons of gold were produced in 2007, approximately 29,900 metric tons were held as official government reserves. Of the approximately 155,000 tons of gold that has historically been mined, as of 2007, approximately 85% was still held by central banks and by nongovernmental entities in bullion, coin and jewelry form.<sup>3</sup>

Based on production data, a production-based ranking of commodities would result in a relatively low weight of approximately 1.6% for gold. Conversely, a relatively non-storable commodity, such as live cattle, would receive an approximate weighting of 6.5% under a production-based ranking.<sup>4</sup> This 4:1 approximate ratio of live cattle to gold may not appropriately reflect the relative economic significance of the two commodities. For example, a 100% increase in the price of gold may be a more significant global economic event than a 25% increase in the price of live cattle, yet the two events would have a nearly identical impact on a production-weighted index. Primary reliance on liquidity data as a weighting measure reduces this type of distortion.

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3. *U.S. Geological Survey 2007 Minerals Yearbook—Gold*, Table 1 & Table 8, 31.2.

4. See Appendix D.





## (2) Diversification

A second major goal of BCOM is to provide diversified exposure to commodities as an asset class. Disproportionate weighting of any particular commodity or sector increases volatility and negates the concept of a broad-based commodity index. Instead of diversified commodities exposure, the investor is unduly subjected to micro-economic shocks in one commodity or sector.

The following diversification rules have been established and are applied annually:

- No single commodity (e.g., natural gas, silver) may constitute more than 15% of the Index.
- No single commodity, together with its derivatives (e.g., WTI crude oil and Brent crude oil, together with ULS diesel and unleaded gas), may constitute more than 25% of the Index.
- No related group of commodities (e.g., energy, precious metals, livestock or grains) may constitute more than 33% of the Index.
- No single commodity (e.g., natural gas, silver) may constitute less than 2% of the Index as liquidity allows.

The last rule helps to increase the diversification of the Index by giving even the smallest commodity within the basket a reasonably significant weight. Commodities with small weights initially may have their weights increased to higher than 2% by prior steps.

In addition to the above rules, BCOM is rebalanced annually on a price-percentage basis to maintain diversified commodities exposure over time.<sup>5</sup>

## (3) Continuity

A third goal of BCOM is to be responsive to the changing nature of commodity markets in a manner that does not completely reshape the character of the Index from year to year. BCOM is intended to provide a stable benchmark, so that end-users may be reasonably confident that historical performance data (including such diverse measures as correlation, spot yield, roll yield and volatility) is based on a structure that bears some resemblance to both the current and future composition of the Index. Several Index features, including annual rebalancing, five-year averaging<sup>6</sup> of liquidity and production data, and the diversification rules set forth below,<sup>7</sup> should allow for a smooth response to future market developments.

## (4) Liquidity

Another goal of BCOM is to provide a highly liquid index, suitable for institutional investment. The explicit inclusion of liquidity as a weighting factor helps to ensure that BCOM can accommodate substantial investment flows. The liquidity of an index not only affects transaction costs associated with current investments, but may also affect the reliability of historical price performance data. That is, to the extent that market inefficiencies may result from substantial inflows of investment capital, these inefficiencies—and corresponding distortions in index performance—will be minimized by weighting distributions that more closely mirror actual liquidity in the markets.

## (5) Summary

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5. See Section 2.7.

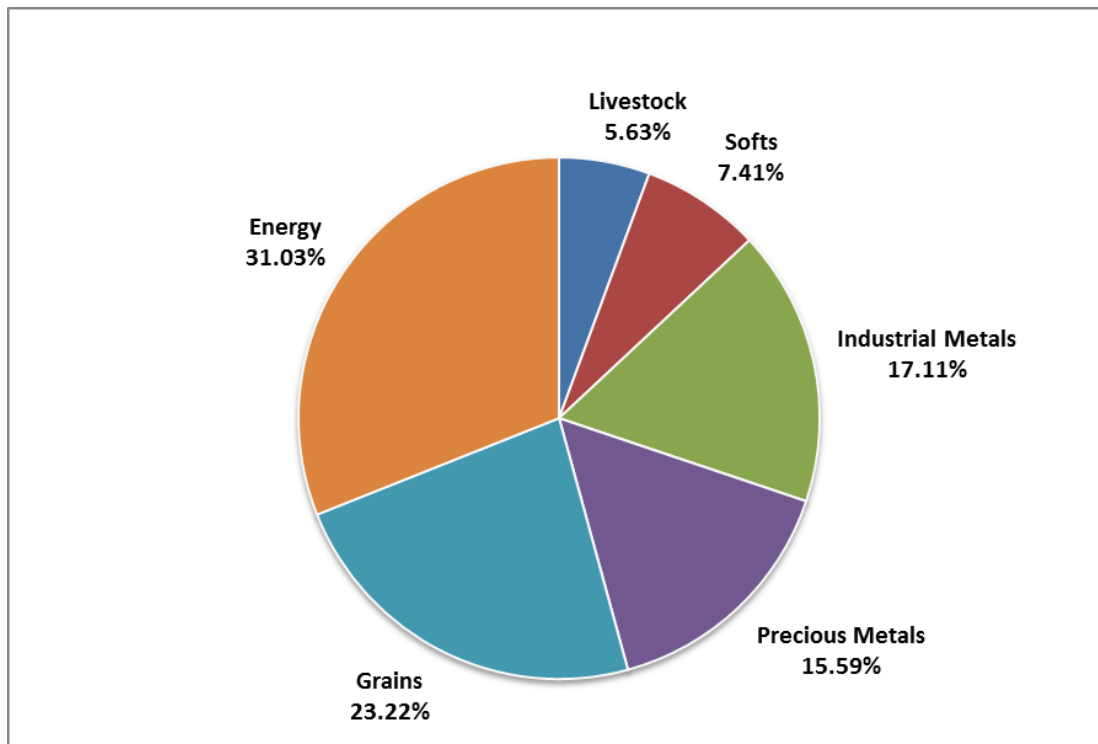
6. See Sections 2.3 and 2.4.

7. See Section 2.6.

Table 1 illustrates the percentage weights for certain commodities and commodity groups in BCOM as of January 2015,<sup>8</sup> based on the principles described above. It should be noted that no single commodity or group dominates the Index, creating a truly diversified commodities benchmark. Additional details in respect to the percentage weights are set forth in Appendix D.

UCITS Compliance—The diversification rules of the Index are structurally compatible with the European Union’s UCITS 35/20 requirements. The history of BCOM is well within the parameters set by the European Union UCITS 35/20 directives.

**Table 1: The Bloomberg Commodity Index—2016 Target Weights**



**1.3. BENCHMARK GOVERNANCE**

**Benchmark Governance, Audit and Review Structure**

Bloomberg has established a robust governance and audit structure in order to monitor, manage and/or improve the objectivity, reliability, consistency, transparency and management and implementation of the benchmark rules, including those applicable to BCOM.

The Benchmark Oversight Committee (BOC) is the uppermost governance body and consists of senior representatives from various Bloomberg business units. Voting members of the BOC do not directly participate in the index business.

The BOC meets on a quarterly basis to review matters such as material risks, conflicts of interest, industry developments, client complaints and material index errors and restatements. To assist in its oversight, the BOC has constituted the Index Operating Subcommittee (IOS).

The IOS is composed of senior benchmark and strategy index managers designated by the BOC. Members include Bloomberg personnel with significant index experience. The IOS meets at least monthly to

address matters such as new index approvals, periodic review of existing indices, index pricing, management of errors and restatements, identification and management of actual and potential conflicts of interest, approvals of changes to indices and approvals of cessation of indices.

The IOS also consults with the Index Advisory Councils (IAC) on the matters outlined below. The IOS reports to the BOC at least quarterly on all matters delegated to it.

### **Index Advisory Council (IAC)**

IACs are composed of key market participants and other influential individuals to assist Bloomberg in setting index priorities, to discuss potential rules changes and to provide ideas for new products. IACs 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 on benchmark index rules are made by the IOS (subject to BOC review) after the review period has ended.

### **Internal and External Reviews**

Index administration is subject to Bloomberg's internal compliance function which periodically reviews various aspects of Bloomberg's businesses in order to determine whether such businesses are adhering to applicable firm-wide policies and procedures, and assess whether applicable internal controls are functioning properly.

In addition to the compliance function, Bloomberg may from time to time appoint an independent external auditor with appropriate experience and capability to periodically review and report on its adherence to the IOSCO Principles for Financial Benchmarks. 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.

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8. Rounded target weightings as of January 2016. Actual percentages on any Business Day may vary from the target weights due to market price fluctuations. The labeled categories are based on the Subindices described in Appendix H, with Natural Gas and Soybean Meal and Soybean Oil in separate categories.

## Section 1.4. CERTAIN RISKS ASSOCIATED WITH THE BLOOMBERG COMMODITY INDEX

The following is a summary of certain risks associated with BCOM but is not meant to be an exhaustive list of all risks associated with the Index or an investment in commodities, commodity futures or commodity-linked or commodity index-linked products generally.

### **Commodity Prices May Change Unpredictably, Affecting the Value of the Index in Unforeseeable Ways**

Trading in futures contracts on physical commodities, including trading in the Index components, is speculative and can be extremely volatile. Market prices of the Index components and the underlying physical commodities may fluctuate rapidly based on numerous factors, including changes in supply and demand relationships (whether actual, perceived, anticipated, unanticipated or unrealized); weather; agriculture; trade; fiscal, monetary and exchange control programs; domestic and foreign political and economic events and policies; disease; pestilence; technological developments; changes in interest rates, whether through government action or market movements; and monetary and other government policies, action and inaction. The current or “spot” prices of the underlying physical commodities may also affect, in a volatile and inconsistent manner, the prices of futures contracts in respect to the relevant commodity. These factors may affect the value of the Index, related indices and Subindices in varying ways, and different factors may cause the prices of the Index components, and the volatilities of their prices, to move in inconsistent directions at inconsistent rates.

### **Trading and Other Transactions by UBS and Its Affiliates in Instruments Linked to the Index or Index Components May Affect the Value of the Index**

UBS and its respective affiliates may also engage in trading in Index, related index and Subindex components, futures or options on such components, the physical commodities underlying such components, 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 Index, related indices or Subindices. Although they are not intended to, any of these activities could adversely affect the market price of the Index components or the value of the Index, related indices or Subindices. It is possible that UBS and its respective affiliates could receive substantial returns from these hedging activities while the market value of the Index components and the values of the Index, related indices or Subindices decline.

With respect to any of the activities described above, neither UBS nor its affiliates has any obligation to take into consideration at any time the needs of any buyer, seller, holder, issuer, market maker of any product linked to the Index, related indices or Subindices or any other person.

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



## **Suspension or Disruptions of Market Trading in Commodities and Related Futures May Adversely Affect the Value of the Index**

The futures markets occasionally experience disruptions in trading (including temporary distortions or other disruptions due to various factors such as the lack of liquidity in markets, the participation of speculators and government regulation and intervention) referred to in this Methodology as “Market Disruption Events.” Market Disruption Events include the cessation, for a material time, of trading in futures contracts included in the Index or the imposition by the futures exchange on which one or more such futures contracts are traded of a “limit price,” a range outside of which such futures contracts are not permitted to trade. In addition, a futures exchange may replace or delist a futures contract included in the Index. Procedures have been established to address such events; such procedures are set forth in this Methodology.<sup>9</sup> There can be no assurance, however, that a Market Disruption Event, the replacement or delisting of a commodity contract or any other force majeure event will not have an adverse or distortive effect on the value of the Index or the manner in which it is calculated.

## **Future Prices of the Index Components That Are Different Relative to Their Current Prices May Affect the Value of the Index**

The Index is composed of commodity futures contracts rather than physical commodities. 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. As the exchange-traded futures contracts that compose the Index approach expiration, they are replaced by similar contracts that have a later expiration. Thus, for example, a futures contract purchased and held in August may specify an October expiration date. 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 these contracts is in “backwardation,” which means that the prices are lower in the distant delivery months than in the 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 these contracts is in “contango,” which means that the prices are higher in the distant delivery months than in the 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 contracts when they are rolled is sometimes referred to as a “roll yield,” and the change in price that contracts experience while they are components of the Index is sometimes referred to as a “spot return.” An investor in the Index cannot receive either the roll yield or the spot return separately.

The presence of contango in the commodity markets could result in negative roll yields, which could adversely affect the value of the Index. Because of the potential effects of negative roll yields, it is possible for the value of the Index to decrease significantly over time, even when the near-term or spot prices of underlying commodities are stable or increasing. It is also possible, when near-term or spot prices of the underlying commodities are decreasing, for the value of the Index to decrease significantly over time even when some or all of the constituent commodities are experiencing backwardation.

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9. See Section 3.3.

Certain commodities included in the Index, such as gold, have historically traded in contango markets and the Index has experienced periods in which many of the commodities in the Index are in contango. Although certain of the contracts included in the Index have historically experienced periods of backwardation, it is possible that such backwardation will not be experienced in the future.

### **The Index May in the Future Include Contracts That Are Not Traded on Regulated Futures Exchanges**

The Index was originally based solely on futures contracts traded on regulated futures exchanges (referred to in the United States as “designated contract markets”). At present, the Index is comprised exclusively of regulated futures contracts. As described below, however, the Index, related indices or Subindices may in the future include over-the-counter contracts (such as swaps and forward 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 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 contracts on such facilities and the inclusion of such contracts in the Index, related indices or Subindices may be subject to certain risks not presented by U.S. or U.K. exchange-traded futures contracts, including risks related to the liquidity and price histories of the relevant contracts.

### **Data Sourcing, Data Publication and Calculation Risks Associated with the Index May Adversely Affect the Level of the Index or the Value of an Investment Linked to the Index**

The composition of the Index, related indices or Subindices is recalculated annually relying on historic price, liquidity and production data that are subject to potential errors in data sources or other errors that may affect the weighting of components of the Index, related indices or Subindices. Any discrepancies that require revision are not applied retroactively but will be reflected in the weighting calculations of the Index, related indices or Subindices for the following year. Additionally, Bloomberg and UBS may not discover every discrepancy.

Furthermore, the weightings for the Index, related indices or Subindices are determined by Bloomberg, which has a significant degree of discretion with respect to the Index, related indices and Subindices. This discretion would permit, among other things, changes to the composition of the Index, related indices or Subindices or changes to the manner or timing of the publication of the values of such indices at any time during the year if Bloomberg deemed the changes necessary in light of factors that include, but are not limited to: (i) changes in liquidity of the underlying futures contracts that are included in the Index, related indices or Subindices or (ii) changes in legal, regulatory, sourcing or licensing matters relating to publication or replication of the Index, related indices or Subindices. In particular, without limitation, UBS’s and Bloomberg’s access to and rights to use data in connection with calculating, publishing and licensing the Index, related indices and Subindices remain subject to the ongoing consent of the sources of such data (including, without limitation, exchanges), which consent can be revoked at any time. Further, the sources of such data reserve the right to revise the terms and conditions of access and use of their data upon notice to UBS and Bloomberg. Bloomberg reserves the right to modify the composition of the Index, related indices or Subindices on an as-needed basis to minimize the impact of any loss of access to or revised terms of use with respect to such source data on the indices.

Bloomberg has no obligation to take the needs of any parties to transactions involving the Index, related indices or Subindices into consideration when reweighting or making any other changes to the Index, related indices or Subindices.

### Other Considerations

The provisions and procedures set forth in this Methodology grant a significant degree of discretion Bloomberg, as administrator of the Index, in a number of respects. Bloomberg may exercise this discretion as it determines to be most appropriate. Furthermore, this Methodology does not address all possible issues relating to the Index, related indices or Subindices and any omissions or exceptions may be addressed as deemed to be appropriate. In addition, this Methodology and any other provisions or procedures relating to such indices may be amended at any time.

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## Chapter 2. INDEX CONSTRUCTION

BCOM is composed of futures contracts on physical commodities. Unlike equities, which typically entitle the holder to a continuing stake in a corporation, commodity futures contracts normally specify a certain date for the delivery of the underlying physical commodity. To avoid the delivery process and maintain a long futures position, nearby contracts must be sold and contracts that have not yet reached the delivery period must be purchased. This process is known as “rolling” a futures position. BCOM is a “rolling index.”

### Section 2.1. INDEX CONSTRUCTION OVERVIEW

**The following overview does not purport to be a complete description of the Index and is qualified in its entirety by reference to the detailed information provided in applicable sections of this Methodology.**

The composition of the Index is rebalanced by Bloomberg each year pursuant to the procedures set forth in this Methodology by index managers operating under the supervision of the Index Oversight Committee. Any material deviations or changes from established procedures are subject to review by the Index Oversight Committee. In addition, to the extent practicable, Bloomberg may solicit stakeholder feedback, including by means of the Index Advisory Council. Once approved, the new composition of the Index is publicly announced and takes effect in the month of January immediately following the announcement.

The first step in constructing BCOM is to determine the relative liquidity and production percentages. The Commodity Liquidity Percentage (“CLP”) for each futures contract (a “Designated Contract”) selected as a reference contract for a commodity designated for potential inclusion in the Index (collectively, “Commodities”) is determined by taking a five-year average of the product of trading volume and the historic U.S. dollar value of such futures contract and dividing the result by the sum of such products for all Designated Contracts. The Commodity Production Percentage (“CPP”) is also determined for each Commodity by taking a five-year average of production figures, adjusted by the historic U.S. dollar value of the applicable Designated Contract, and dividing the result by the sum of such products for all Commodities.

The Commodity Liquidity Percentage and the Commodity Production Percentage are then combined (using a ratio of 2:1) to establish the Commodity Index Percentage (“CIP”) for each Commodity. This Commodity Index Percentage is then adjusted in accordance with the diversification rules described in Section 1.2 above and Section 2.6 below to determine the Commodities that will be included in the Index (“Index Commodities”) and their respective percentage weights.

On the fourth Business Day of the month of January (the “CIM Determination Date”) following the calculation of the CIPs, the CIPs are combined with the Settlement Prices of all Designated Contracts for such day to create the Commodity Index Multiplier (“CIM”) for each Designated Contract. The Commodity Index Multipliers remain in effect throughout the ensuing year.

Once the CIMs are determined, the calculation of BCOM is an arithmetic process whereby the CIMs for the Index Commodities are multiplied by the respective prices in U.S. dollars for the applicable Designated Contracts. The products are then summed. The daily percentage change in this sum is then applied to the prior day’s BCOM value to calculate the then-current BCOM value.<sup>10</sup>

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10. See Sections 2.8 and 3.1.



## Section 2.2. SELECTION OF COMMODITIES FOR INCLUSION IN THE INDEX

### (1) Commodities Available for Inclusion in the Index

Commodities have been selected that are believed to be both sufficiently significant to the world economy to merit consideration and that are tradable through a qualifying related futures contract. With the exception of several metals contracts (aluminum, lead, tin, nickel and zinc) that trade on the London Metals Exchange<sup>®</sup> ("LME") and the contract for Brent crude oil, each of the Commodities is the subject of at least one futures contract that trades on a U.S. exchange.

The 24 Commodities eligible for inclusion in the Index currently are:

1. Aluminum
2. Cocoa
3. Coffee
4. Copper
5. Corn
6. Cotton
7. Crude Oil (with two Designated Contracts: WTI and Brent)
8. Gold
9. ULS Diesel
10. Lead
11. Lean Hogs
12. Live Cattle
13. Natural Gas
14. Nickel
15. Platinum
16. Silver
17. Soybean Meal
18. Soybean Oil
19. Soybeans
20. Sugar
21. Tin
22. Unleaded Gas
23. Wheat (with two Designated Contracts: Soft [Chicago] and Hard Red Winter [KC HRW])
24. Zinc

The 20 Index Commodities represented in the Index for the 2015 year following application of the following procedures are:

1. Aluminum
2. Coffee
3. Copper
4. Corn
5. Cotton
6. Crude Oil (WTI and Brent)
7. Gold
8. ULS Diesel



9. Lean Hogs
10. Live Cattle
11. Natural Gas
12. Nickel
13. Silver
14. Soybean Meal
15. Soybean Oil
16. Soybeans
17. Sugar
18. Unleaded Gas
19. Wheat (Chicago and KC HRW)
20. Zinc

## **(2) Designated Contracts**

One or more Designated Contracts is selected by Bloomberg for each of the 24 Commodities eligible for inclusion in the Index. This selection process is subject to review by the Index Oversight Committee and, if practicable, input from the Index Advisory Council.

Historically, through and including the composition of the Index for 2015, Bloomberg has chosen for each Commodity one Designated Contract that is traded in North America and denominated in U.S. dollars (with the exception of several LME contracts, which are traded in London, and with the exception of crude oil, for which two Designated Contracts have been selected starting in 2012, and wheat, for which two Designated Contracts that are traded in North America have been selected starting in 2013).

It is possible that Bloomberg will in the future select more than one Designated Contract for additional commodities or may select Designated Contracts that are traded outside of the United States or in currencies other than the U.S. dollar. For example, in the event that changes in regulations concerning position limits materially affect the ability of market participants to replicate the Index in the underlying futures markets, it may become appropriate to include multiple Designated Contracts for one or more Commodities (in addition to crude oil and wheat) to enhance liquidity.

The termination or replacement of a futures contract on an established exchange occurs infrequently; were a Designated Contract to be terminated or replaced, a comparable futures contract would be selected, if available, to replace that Designated Contract.

The Designated Contracts for the Commodities are listed in Table 2.

**Table 2: Designated Contracts for the Commodities<sup>11</sup>:**

Commodity	Designated Contract	Exchange	Units	Price Quote
Natural Gas	Henry Hub Natural Gas	NYMEX	10,000 mmbtu	USD/mmbtu
WTI Crude Oil	Light, Sweet Crude Oil	NYMEX	1,000 barrels	USD/barrel
Brent Crude Oil	Brent Crude Oil	ICE	1,000 barrels	USD/barrel
Unleaded Gasoline	RBOB	NYMEX	42,000 gal	U.S. cents/gallon
ULS Diesel	ULS Diesel	NYMEX	42,000 gallons	U.S. cents/gallon
Live Cattle	Live Cattle	CME	40,000 lbs	U.S. cents/pound
Lean Hogs	Lean Hogs	CME	40,000 lbs	U.S. cents/pound
Wheat (Chicago)	Soft Wheat	CBOT	5,000 bushel	U.S. cents/bushel
Wheat (KC HRW)	Hard Red Winter Wheat	CBOT	5,000 bushel	U.S. cents/bushel
Corn	Corn	CBOT	5,000 bushels	U.S. cents/bushel
Soybeans	Soybeans	CBOT	5000 bu	U.S. cents/bushel
Soybean Meal	Soybean Meal	CBOT	100 short tons	USD/short ton
Soybean Oil	Soybean Oil	CBOT	60,000 lbs	U.S. cents/pound
Aluminum	High Grade Primary Aluminum	LME	25 metric tons	USD/metric ton
Copper	Copper	COMEX	25,000 lbs	U.S. cents/pound
Zinc	Special High Grade Zinc	LME	25 metric tons	USD/metric ton
Nickel	Primary Nickel	LME	6 metric tons	USD/metric ton
Lead	Refined Standard Lead	LME	25 metric tons	USD/metric ton
Tin	Refined Tin	LME	5 metric tons	USD/metric ton
Gold	Gold	COMEX	100 troy oz.	USD/troy oz.
Silver	Silver	COMEX	5000 troy oz.	U.S. cents/troy oz.
Platinum	Platinum	NYMEX	50 troy oz.	USD/troy oz.
Sugar	World Sugar No. 11	NYBOT	112,000 lbs	U.S. cents/pound
Cotton	Cotton	NYBOT	50,000 lbs	U.S. cents/pound
Coffee	Coffee "C"	NYBOT	37,500 lbs	U.S. cents/pound
Cocoa	Cocoa	NYBOT	10 metric tons	USD/metric ton

BCOM utilizes the Copper contract traded on the COMEX division of the New York Mercantile Exchange ("COMEX") as the Designated Contract for copper but utilizes COMEX prices for this Designated Contract and LME copper contract volume data for purposes of Index calculation. The Index incorporates volume data for the LME copper contract as it is more actively traded than the COMEX High Grade Copper contract and provides a better indication of the relative significance of this commodity.

### Price Information

11. Contract specifications for gas oil, orange juice and feeder cattle are included solely for purposes of the single-commodity Subindices described in, or referenced by, Appendix H.





**(3) Commodity Groups**

For purposes of applying the diversification rules referred to in Section 1.2 above and described in Section 2.6 below, each of the Commodities eligible for inclusion in the Index are assigned to “Commodity Groups.” The Commodity Groups, and the Commodities composing each Commodity Group, are as follows:

Commodity Group	Commodities
Energy	Crude Oil (WTI and Brent) ULS Diesel Natural Gas RBOB Gasoline
Precious Metals	Gold Platinum Silver
Industrial Metals	Aluminum Copper Lead Nickel Tin Zinc
Livestock	Live Cattle Lean Hogs
Grains	Corn Soybeans Soybean Oil Soybean Meal Wheat (Chicago and KC HRW)
Softs	Cocoa Coffee Cotton Sugar

#### (4) Commodity Sectors

The Index includes both “Primary Commodities” (i.e., base Commodities that are not principally derived or produced from other Commodities) and “Derivative Commodities” (i.e., Commodities that are principally derived or produced from other Commodities). Together with its Derivative Commodities, each Primary Commodity is referred to in this Methodology as a “Commodity Sector.” The Index Commodities that constitute Primary Commodities and their respective Derivative Commodities currently are as follows:

Primary Commodity	Derivative Commodities
Crude Oil (WTI and Brent)	ULS Diesel and RBOB Gasoline
Soybeans	Soybean Oil and Soybean Meal

Adjustments are made, as described in Section 2.6 below, to avoid the “double-counting” of Primary Commodities that would result if Primary Commodities and Derivative Commodities were viewed as wholly separate categories. Bloomberg, as Index administrator, may determine that other Index Commodities qualify as Derivative Commodities, and the adjustments described in Section 2.6 below will then be made with respect to those Derivative Commodities as well.

### Section 2.3. CALCULATION OF THE COMMODITY LIQUIDITY PERCENTAGES

#### (1) Description of Calculation

Each Designated Contract eligible for inclusion in the Index is assigned a liquidity weighting (the “Commodity Liquidity Percentage” or “CLP”) based on the average volume of trading.<sup>14</sup> To ensure that aberrant trading years do not distort the Commodity Liquidity Percentage, the average is computed on the basis of historical annual volume data for the five years (the “Liquidity Averaging Period”) up to and including the year prior to the applicable Calculation Period.<sup>15</sup> Thus, for the Calculation Period for 2016 (i.e., 2015), the Liquidity Averaging Period was the years 2010 to 2014, inclusive. The volume data used in the calculation of the Commodity Liquidity Percentages was obtained from Bloomberg and Futures Industry Association (the “FIA”).<sup>16</sup>

In contrast to U.S. futures, which are typically listed on a monthly or bimonthly basis and trade only during specific hours, LME contracts can be traded over-the-counter, 24 hours a day, for value on any Business Day within a three-month window extending out from spot. In addition, LME contracts can be traded for settlement on the third Wednesday of each month extending out 27 months from the date the contract is made. Accordingly, historical data comparable to that of U.S. futures contracts is not available for these LME contracts and certain adjustments to the available data are made for purposes of calculating this component of the Index. In particular, LME contracts that trade on the third Wednesday of each month will serve as a proxy for U.S. futures contracts. The calculation of BCOM will utilize the LME contracts that trade on the third Wednesday of every other month, starting with January.

14. Although BCOM incorporates the prices of the COMEX High Grade Copper contract, the more actively traded LME copper contracts are used for determining the CLP for copper because the LME copper contracts provide a better indication of the relative significance of this commodity. See Section 2.2(2) above.

15. The “Calculation Period” for each year for which the Index is calculated is typically the third or fourth calendar quarter of the year preceding such year of calculation.

16. Volume Data Source: U.S. and International Monthly Volume reports; published by the Futures Industry Association, electronic data used.

Furthermore, because of the greater flexibility of trading times and dates, reported LME volume figures cannot be directly compared with those for traditional futures contracts traded on U.S. exchanges. To equate LME volume data with U.S. exchanges, BCOM will use one-third of reported LME volume in its calculation. This discounting allows a fair comparison of LME volume data with U.S. volume data for purposes of measuring the relative liquidity of various Designated Contracts.

Table 3 sets forth the most recent five years of volume data as reported by the FIA, Bloomberg, and the adjusted LME data.

**Table 3: Contract Volume Data**

Commodity	2010	2011	2012	2013	2014
Natural Gas	64,323,068	76,864,334	94,799,542	84,282,495	74,206,602
Crude Oil	168,652,141	175,036,216	140,531,588	147,690,593	145,147,334
Brent Crude	100,022,169	132,045,563	147,385,858	159,093,303	160,425,461
Unleaded Gasoline	27,898,698	31,129,256	36,603,841	34,470,288	34,421,866
ULS Diesel (HO)	26,970,106	31,838,626	36,087,707	32,749,553	33,946,420
Live Cattle	11,332,739	13,532,554	13,985,374	12,463,043	13,599,292
Lean Hogs	8,076,535	9,969,961	11,461,892	11,277,038	10,656,944
Wheat (Chicago)	23,090,255	24,283,331	27,379,403	24,993,158	25,853,154
Wheat (KC HRW)	5,549,842	6,342,782	5,302,197	5,452,437	5,868,153
Corn	69,841,420	79,004,801	73,184,337	64,322,600	69,437,304
Soybeans	36,933,960	45,143,755	52,041,615	46,721,081	49,169,361
Soy Meal	14,052,845	16,920,194	18,187,433	20,237,181	20,637,382
Soybean Oil	20,791,164	24,156,509	27,627,590	23,805,912	23,769,391
Aluminum	15,512,393	19,852,777	19,707,861	21,255,968	21,813,230
Copper	10,305,670	12,491,517	16,158,815	13,495,339	12,937,203
Zinc	6,021,880	7,328,101	9,853,113	10,090,123	10,107,966
Nickel	2,441,740	2,685,474	3,721,483	4,559,497	6,026,366
Lead	2,581,582	3,640,627	4,749,646	4,310,356	4,290,980
Tin	518,090	630,544	615,605	687,300	703,979
Gold	44,730,345	49,175,593	43,893,311	47,294,551	40,518,804
Silver	12,826,666	19,608,557	13,315,679	14,475,593	13,696,961
Platinum	1,486,507	1,993,263	2,621,704	3,262,775	3,235,941
Sugar	29,052,539	24,629,369	27,126,728	29,813,680	29,396,597
Cotton	5,732,906	5,288,454	6,130,352	6,155,024	5,787,883
Coffee	5,488,196	5,174,538	6,125,484	7,124,029	7,052,230
Cocoa	3,797,679	4,948,052	5,999,813	6,583,746	6,315,792

Table 4 sets forth the corresponding average Settlement Prices for Lead Futures on the first Business Day of each month; these figures are used in combination with the volume data above to calculate the Commodity Liquidity Percentages. The Lead Future is the contract month set forth under the corresponding WAV month in Table 9. These Settlement Prices have all been converted into U.S. dollars per unit.

Table 4: Average Lead Futures Price on First Business Day of Each Month

Commodity	2010	2011	2012	2013	2014
Natural Gas	\$4.52	\$4.21	\$2.90	\$3.70	\$4.30
Crude Oil	\$80.37	\$96.36	\$95.24	\$97.39	\$94.21
Brent Crude	\$80.90	\$110.49	\$110.90	\$107.84	\$101.37
Unleaded Gasoline	\$2.13	\$2.82	\$2.88	\$2.83	\$2.65
ULS Diesel (HO)	\$2.16	\$2.97	\$3.03	\$2.99	\$2.81
Live Cattle	\$0.94	\$1.15	\$1.24	\$1.28	\$1.50
Lean Hogs	\$0.76	\$0.90	\$0.85	\$0.89	\$1.05
Wheat (Chicago)	\$5.79	\$7.23	\$7.55	\$6.92	\$5.91
Wheat (KC HRW)	\$5.99	\$8.20	\$7.85	\$7.43	\$6.67
Corn	\$4.21	\$6.77	\$6.93	\$5.72	\$4.19
Soybeans	\$10.24	\$13.32	\$14.54	\$13.56	\$12.18
Soy Meal	\$290.92	\$349.97	\$421.18	\$408.72	\$403.14
Soybean Oil	\$0.41	\$0.56	\$0.53	\$0.46	\$0.37
Aluminum	\$2,193.39	\$2,468.94	\$2,059.06	\$1,886.69	\$1,877.65
Copper	\$7,522.72	\$9,027.01	\$8,026.48	\$7,383.46	\$6,896.06
Zinc	\$2,184.46	\$2,266.06	\$1,968.52	\$1,939.96	\$2,156.33
Nickel	\$21,896.92	\$23,404.35	\$17,664.29	\$15,227.96	\$16,693.29
Lead	\$2,161.33	\$2,434.08	\$2,086.38	\$2,171.54	\$2,119.44
Tin	\$19,886.67	\$26,734.67	\$21,128.42	\$22,306.67	\$21,964.50
Gold	\$1,214.57	\$1,563.86	\$1,679.78	\$1,432.57	\$1,261.05
Silver	\$19.71	\$35.53	\$31.67	\$24.28	\$19.11
Platinum	\$1,606.95	\$1,746.80	\$1,559.76	\$1,495.28	\$1,392.24
Sugar	\$0.22	\$0.27	\$0.22	\$0.18	\$0.17
Cotton	\$0.89	\$1.36	\$0.80	\$0.83	\$0.76
Coffee	\$1.60	\$2.56	\$1.81	\$1.27	\$1.78
Cocoa	\$2,971.50	\$2,989.17	\$2,325.50	\$2,363.92	\$2,985.17

## (2) Calculating Commodity Liquidity Percentages

Using the data obtained as described above, the Commodity Liquidity Percentage for each Designated Contract is calculated as follows:

1. Determine the total annual volume for each year of the Liquidity Averaging Period.<sup>17</sup>
2. For each such year, calculate the average of the Settlement Prices for the Lead Future on the first Business Day of each month.
3. Determine the number of units for the Designated Contract (e.g., 1,000 Barrels, 60,000 Metric Tons, etc.).
4. Convert the average Settlement Price into U.S. dollars.
5. For each year of the Liquidity Averaging Period, multiply the related annual volume by such average Settlement Price in U.S. dollars, and then multiply that result by the number of units per contract.<sup>18</sup>
6. Take the average of the results of Step 5 for each Designated Contract.

17. Divide the LME Volume by 3 as described in Section 2.3(1).





18. The COMEX price for copper must also be converted into metric tons, which corresponds with the LME volume data; multiply the COMEX price by 2,204.622 and then multiply by the LME volume.



Once the above steps have been completed for each Designated Contract:

7. Take the sum of all Step 6 results.
8. For each Designated Contract, divide the results of Step 6 by the total from Step 7.

The percentages calculated in Step 8 are the Commodity Liquidity Percentages. The total of all the Commodity Liquidity Percentages should be 100%.

## Section 2.4. Calculation of Commodity Production Percentages

### (1) Description of the Calculation

Each Designated Contract will also be assigned a Commodity Production Percentage based on its average U.S.-dollar-adjusted value of production. As with the calculation of the Commodity Liquidity Percentages, the Commodity Production Percentages are calculated over a five-year period (the “Production Averaging Period”). However, because of the greater time lag in obtaining production data, the Production Averaging Period is the most recent five-year period for which production figures for all Index Commodities are available. For the Calculation Period for 2016 (i.e., 2015), the Production Averaging Period comprises the years 2008 to 2012, inclusive. Bloomberg may in the future use data with a shorter lag period should such data become available and may use data with a longer lag period if necessary due to publication schedules of the relevant sources.

On the following page, Table 5 outlines the sources from which the production data for each Commodity are derived. Note that the sources from which the data are derived may use different terminology than that used in this Methodology.



Table 5: Sources Used for Production Data

Commodity	Source	Table
Natural Gas	U.S. EIA Annual Statistical Supplement	Gross Natural Gas Production
Crude Oil	U.S. EIA Annual Statistical Supplement	World Crude Oil Production
Live Cattle	<a href="#">Food and Agriculture Organization of the UN Statistical Data Service ("FAOSTAT")</a>	Cattle Meat
Lean Hogs	FAOSTAT	Pig Meat
Wheat	FAOSTAT	Wheat Production
Corn	FAOSTAT	Maize
Soybeans	FAOSTAT	Soybeans
Aluminum	<a href="#">U.S. Geological Survey Minerals Yearbook—2012, U.S. Department of the Interior (MYDI)</a>	Aluminum Primary World Production
Copper	MYDI	Copper, World Refinery Production
Zinc	MYDI	Zinc World Smelter Production
Nickel	MYDI	Nickel World Plant Production
Lead	MYDI	Lead World Refinery Production
Tin	MYDI	Tin World Smelter Production
Gold	MYDI	World Mine Production
Silver	MYDI	World Mine Production
Platinum	MYDI	Platinum—Group Metals, World Production
Sugar	<i>Sugar Yearbook, 2015</i> , International Sugar Organization	World Sugar Situation
Cotton	FAOSTAT	Cotton Lint
Coffee	FAOSTAT	Coffee, Green
Cocoa	FAOSTAT	Cocoa Beans

As described more fully below, production weightings are adjusted by the Designated Contract values in U.S. dollars. This adjustment helps ensure that the relative production weightings in the Index more closely approximate the economic value of production over time.

## (2) Calculating Commodity Production Percentages

Two procedures are required to determine the Commodity Production Percentage ("CPP") for each Commodity:

### Calculate the Commodity Production Weight ("CPW"):

1. The production data for each year in the Production Averaging Period is determined for all Commodities eligible for inclusion in the Index; however, data for Derivative Commodities is not included to avoid double-counting and, where there are multiple Designated Contracts for a particular Commodity, the production data is allocated at this stage to only one Designated Contract also to avoid double-counting. Data for all Commodities is drawn from the same five-year period.
2. For each Commodity, a conversion factor is determined to convert the production data into the pricing terms of each Designated Contract. For example, crude oil production is reported in metric tons, whereas crude oil futures are denominated in barrels. By multiplying the production data by the crude oil conversion factor, such data is converted into barrels. Next, this product is multiplied by the production-reporting-size factor, if applicable. The result is the Commodity Production Weight, or CPW. See Appendix B for a list of sources used for obtaining these conversion factors.
3. Each CPW is divided by 1,000,000. This reduces all weightings to a manageable size without affecting the relative percentages.

**For the same five years used in calculating the CPWs:**

1. Calculate the average of the Settlement Prices of the Lead Future on the first Business Day of each month for each year in the Production Averaging Period.<sup>19</sup>
2. Convert each average of the Settlement Prices into U.S. dollar terms.
3. Multiply the CPW for each year by such average price in U.S. dollar terms.
4. Take the average of the results of Step 3 for each Commodity.

**Once the above steps have been completed for each Commodity:**

5. Take the sum of all Step 4 results.
6. For each Commodity, divide the results of Step 4 by the total from Step 5.

The percentages calculated in Step 6 are the Commodity Production Percentages. The total of the Commodity Production Percentages should be 100%. Note that the Derivative Commodities and any Designated Contracts that are additional to the first Designated Contract for a particular Commodity will have Commodity Production Percentages of zero at this point. Values from the Primary Commodities are allocated to the Derivative Commodities and such additional Designated Contracts in a later step, as described in Section 2.5 below.

Table 6 below sets forth the production data for each Commodity used in calculating the Commodity Production Percentages.<sup>20</sup> World production data is used with the following exception:

For natural gas, only North American production is used. Due to a lack of economically viable transportation systems across continents, and between North America and Eurasia, natural gas is a uniquely regional commodity.

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19. Note that due to greater lag time, the production data is multiplied by different Settlement Prices than those Settlement Prices used to calculate CLPs. Price data corresponds to the year of observation for both production and liquidity rankings.

20. Prior to 2010, aluminum, gold, cattle and hogs production data was normalized to conform new data sources to data sources for prior years and to adjust for incompleteness of data. This normalization was discontinued in 2010 in respect of the determination of the Commodity Index Percentages for 2011 and thereafter. Concurrently, the data source for production of cattle meat and pig meat was switched from ICSY to FAOSTAT (see Table 5 above).

Table 6: Production Data

Commodity	Reporting Unit	2008	2009	2010	2011	2012
<b>Natural Gas</b>	Billion Cubic Feet	35,187	34,961	35,484	37,020	37,569
<b>Crude Petroleum</b>	Thous. Barrels	31,598,009	31,294,663	32,162,546	32,315,726	33,018,468
<b>Beef &amp; Fresh Veal</b>	Thous. Met Tons	62,518	62,525	63,071	62,746	63,177
<b>Pork</b>	Thous. Met Tons	102,944	104,965	107,571	108,017	111,398
<b>Wheat</b>	Thous. Met Tons	683,207	686,720	649,325	699,373	671,482
<b>Corn</b>	Thous. Met Tons	830,611	820,203	851,257	887,665	877,924
<b>Soybeans</b>	Thous. Met Tons	231,272	223,411	265,120	261,886	240,971
<b>Aluminum</b>	Thous. Met Tons	39,700	37,300	41,200	44,400	45,900
<b>Copper</b>	Thous. Met Tons	18,300	18,300	19,100	19,700	20,100
<b>Zinc</b>	Thous. Met Tons	11,700	11,400	12,800	13,200	12,800
<b>Nickel</b>	Metric Tons	1,390,000	1,370,000	1,440,000	1,620,000	1,760,000
<b>Lead</b>	Thous. Met Tons	8,730	8,860	9,530	10,100	10,200
<b>Tin</b>	Metric Tons	334,000	327,000	335,000	337,000	321,000
<b>Gold</b>	Kilograms	2,300,000	2,480,000	2,580,000	2,670,000	2,690,000
<b>Silver</b>	Metric Tons	21,300	22,300	23,900	24,100	25,500
<b>Platinum</b>	Kilograms	193,000	184,000	192,000	200,000	183,000
<b>Sugar</b>	Thous. Met Tons	152,773	141,140	147,023	161,210	171,156
<b>Cotton</b>	Thous. Met Tons	22,459	20,877	23,591	26,130	26,532
<b>Coffee</b>	Thous. Met Tons	8,499	7,789	8,468	8,395	9,210
<b>Cocoa</b>	Thous. Met Tons	4,266	4,212	4,341	4,627	4,646

As an example of the production data conversion process, Table 7 below lists the production data and Commodity Production Weights for 2012 and the conversion factors used to convert the production data into the Commodity Production Weights.

Table 7: 2012 Production Data Converted into Commodity Production Weights

Commodity	Production Units	Production	Size Factor	Contract Terms	Conversion Factor	2012 CPW
Natural Gas	Cubic Feet	37,569	1	10000 mmbtu	1,000,000.00	37,568,746,350.00
Crude Petroleum	Barrels	33,018,468	1000	1000 bbl	1	33,018,468.45
Beef & Fresh Veal	Thous Met Tons	63,177	1000	40000 lbs	3,486.43	220,261,358.34
Pork	Thous Met Tons	111,398	1000	40000 lbs	2,204.62	245,589,171.88
Wheat	Thous Met Tons	671,482	1000	5000 bu	36.7437	24,672,730.33
Corn	Thous Met Tons	877,924	1000	5000 bu	39.3683	34,562,384.35
Soybeans	Thous Met Tons	240,971	1000	5000 bu	36.7437	8,854,170.91
Aluminum	Thous Met Tons	45,900	1000	25 mtons	1	45,900.00
Copper	Thous Met Tons	20,100	1000	25000 lbs	1	20,100.00
Zinc	Thous Met Tons	12,800	1000	25 mtons	1	12,800.00
Nickel	Metric Tons	1,760,000	1	6 mtons	1	1,760,000.00
Lead	Thous Met Tons	10,200	1000	25 mtons	1	10,200.00
Tin	Metric Tons	321,000	1	5 mtons	1	321,000.00
Gold	Kilograms	2,690,000	1	100 oz	32.1508	86,485,652.00
Silver	Metric Tons	25,500	1	5000 oz	32,150.75	819,844,125.00
Platinum	Kilograms	183,000	1	50 oz	32.1508	5,883,596.40
Sugar	Thous Met Tons	171,156	1000	112000 lbs	2,204.62	377,333,940.72
Cotton	Thous Met Tons	26,532	1000	50000 lbs	2,204.62	58,492,424.48
Coffee	Thous Met Tons	9,210	1000	37500 lbs	2,204.62	20,304,023.30
Cocoa	Thous Met Tons	4,646	1000	10 tons	1	4,645.68

Appendix F contains a table of the Commodity Production Weights and average Settlement Prices used to calculate the Commodity Production Percentages for 2016.

## Section 2.5. Allocation of Commodity Production to Derivative Commodities and Additional Designated Contracts

As discussed in Section 2.2(4) above, certain Index Commodities are Primary Commodities, whereas others are Derivative Commodities within the same Commodity Sector. The production weightings for Derivative Commodities are not calculated in the manner described in Section 2.4 above. Instead, the Commodity Production Percentages within each Commodity Sector must be reassigned among the Primary Commodities and its Derivative Commodities to eliminate the double-counting of production figures for the Primary Commodity that would otherwise occur if no adjustment were made. The same process is applied when more than one Designated Contract has been selected for a particular Commodity (an “Additional Designated Contract”). To allocate Commodity Production Percentages to any such Derivative Commodity set forth in Section 2.2(4) or Additional Designated Contract, the following steps are taken:

1. Take the sum of the Commodity Liquidity Percentages for all the Primary Commodities, Additional Designated Contracts and Derivative Commodities in each Commodity Sector.
2. Divide the Commodity Liquidity Percentage for each Primary Commodity, Additional Designated Contract and Derivative Commodity in each Commodity Sector by the sum calculated in step 1 above for that Commodity Sector. The result is the “Commodity Sector Allocation Percentage,” or “CSAP,” for that Index Commodity. The Commodity Sector Allocation Percentages should sum to 100%.

3. Set the new Commodity Production Percentage for each Primary Commodity, Additional Designated Contract and Derivative Commodity within that Commodity Sector to equal the Commodity Production Percentage for the Primary Commodity multiplied by the individual Commodity Sector Allocation Percentages. For example:

WTI Crude Oil CPP	= Crude Oil CPP x WTI Crude Oil CSAP
Heating Oil CPP	= Crude Oil CPP x ULS Diesel CSAP
RBOB Gas CPP	= Crude Oil CPP x RBOB Gas CSAP

Once the Primary Commodity's Commodity Production Percentage has been reallocated to that Primary Commodity, Additional Designated Contracts and Derivative Commodities, all the Commodity Production Percentages should continue to sum to 100%.

These calculations are explained in further detail in Appendix D.

### Section 2.6. Calculation of the Commodity Index Percentages

Bloomberg calculates the Commodity Index Percentages for each year in the third or fourth quarter of the year immediately prior to the year the relevant Commodity Index Percentages are effective and publishes the results as promptly as practicable following the calculation. These new Commodity Index Percentages are implemented in January of the effective year. Early publication allows users of the Index ample time to make any necessary adjustments. Continuity of the Commodity Index Percentages is one goal in the design of BCOM.

The Commodity Index Percentage for each Designated Contract included in the Index is calculated as follows:

#### Step A – Allocating 2/3 liquidity, 1/3 production

For each Designated Contract, calculate the sum of (a) 2/3 multiplied by the Commodity Liquidity Percentage for that Designated Contract plus (b) 1/3 multiplied by the Commodity Production Percentage for that Designated Contract. This sum is the "Interim Commodity Index Percentage," or "ICIP." The sum of the ICIPs should be 100%.

#### Step B – Eliminating Commodities Under 0.4%<sup>21</sup>

1. Once all the ICIPs are calculated, set any ICIPs that are less than 0.4% to zero. The related Commodities are not included in the Index for the related year, and none of the Index calculation procedures that follow are performed with respect to these Commodities. The remaining Designated Contracts are the Index Designated Contracts.
2. Calculate the sum of the ICIPs discarded in procedure 1 of this step B. Allocate this sum equally among the Commodity Sectors. For any Commodity Sector that has more than one contract, the allocation will be equally split among these contracts (Primary Commodities, Derivative Commodities and Commodities with Multiple Designated Contracts receive equal split). The sum of the ICIPs should continue to be 100%.

21. The rule set forth as step B of this Section 2.6 used in 2014 a minimum-inclusion threshold of 0.4% to create the composition of BCOM for 2015. It is anticipated that Bloomberg may, from time to time, exercise discretion in setting the threshold for this rule in furtherance of the objectives underlying BCOM. In particular, when considering marginal commodities not currently included in BCOM for potential future inclusion, Bloomberg has the discretion to raise or lower the minimum-inclusion threshold from 0.5% up to a maximum of 3% from year to year.

Step C – Reducing Any Commodity Sector over 25% Down to 25%

Take the sum of the ICIPs for each Commodity Sector. If the ICIPs for any Commodity Sector sum to greater than 25%:

1. Subtract 25% from each Commodity Sector sum that exceeds 25%.
2. Allocate the total difference equally among the other Index Commodities not affected by this rule, while treating sectors as one asset when distributing the excess. For any Index Commodity that has more than one Designated Contract, the allocation for this Index Commodity will be equally split among its Designated Contracts. Do not allocate to any Commodity that was eliminated by the minimum threshold rule (step B of this Section 2.6).
3. Allocate 25% to the Commodity Sectors that exceeded 25% in proportion to the original distribution within this Commodity Sector (i.e., the new ICIP = 25% x original ICIP/sum of Commodity Sector original ICIPs).

The total of all the ICIPs should continue to equal 100%.

Step D – Reducing Any Index Commodity ICIP over 15% to 15%

If the ICIP of any Index Commodity is over 15%<sup>22</sup>:

1. Subtract 15% from that Commodity's ICIP.
2. Allocate this difference equally among the other Index Commodities not affected by this rule, while treating sectors as one asset when distributing the excess. For any Commodity Sector that has more than one underlying contract or Commodities with Multiple Designated Contracts, the allocation will be equally split among their underlying contracts. Do not allocate to any Commodity that was eliminated by the minimum rule (Step B of this Section 2.6) or to any Index Commodity if the allocation would cause the 25% Commodity Sector Maximum limit to be exceeded.
3. Set this ICIP to 15%.

The total of all the ICIPs should continue to equal 100%.

Step E – Reducing Any Commodity Group ICIP to Under 33%

Take the sum of the ICIPs for each Commodity Group. If any Commodity Group's ICIP sums to greater than 33%:

1. Subtract 33% from the sum of the Commodity Group's ICIP.
2. Allocate this difference equally among the other Index Commodities not affected by this rule, while treating sectors as one asset when distributing the excess. For any Commodity Sector that has more than one underlying contract or Commodities with Multiple Designated Contracts, the allocation will be equally split among their underlying contracts. Do not allocate to any Commodity that was eliminated by the minimum rule (Step B of this Section 2.6) or to any Designated Contract if the allocation would cause the 25% Commodity Sector or the 15% Commodity maximum limits to be exceeded.

22. Note that Brent and WTI are considered together as one Commodity for purposes of applying the 15% limit. Chicago Wheat and KC HRW Wheat are also considered together for the same purposes.



3. Allocate 33% to the Designated Contracts in this Commodity Group in proportion to the original distribution within this Commodity Group (i.e., the new ICIP = 33% x original ICIP/sum of Commodity Group original ICIP).

The total of all the ICIPs should continue to equal 100%.

#### Step F – *Setting Gold and Silver Weights to Equal Their Commodity Liquidity Percentages*

As discussed in Section 1.2(1) above, reliance on production data for gold, and similarly for silver, understates the relative economic significance of these Commodities. Accordingly, the Commodity Index Percentages for gold and silver are adjusted to reflect only the Commodity Liquidity Percentages. The adjustment is made as follows:

1. Take the difference between the ICIPs for gold and silver and their respective Commodity Liquidity Percentages. Sum these differences.
2. Set the gold and silver ICIPs to equal their respective Commodity Liquidity Percentages (but do not cause the 15% Commodity or 25% Commodity Sector limits to be exceeded).
3. Change the ICIPs of the remaining Designated Contracts by allocating the sum derived in procedure 1 of this Step F equally among them, while treating Sectors as one asset when distributing the excess. For any Commodity Sector that has more than one underlying contract or Commodities with Multiple Designated Contracts, the allocation will be equally split among their underlying contracts. Do not change any ICIPs for Index Commodities eliminated under the minimum threshold rule (Step B of this Section 2.6) or reduced by the 25% Commodity Sector, 15% Commodity or 33% Commodity Group limits.

The sum of the ICIPs should continue to be 100%.

#### Step G – *Increasing Any Sector ICIP Under 2% to 2%*

If any remaining Commodity Sector has an ICIP under 2%:

1. Take the difference between each of these Index Commodities' ICIPs and 2%. Sum all these differences.
2. Decrease the ICIPs of the remaining Designated Contracts by allocating the sum derived in procedure 1 of this Step G, so that each Designated Contract receives an equal allocation. Do not decrease any ICIPs for Index Commodities eliminated under the minimum threshold rule (Step B of this Section 2.6) or reduced by the 25% Commodity Sector, 15% Commodity or 33% Commodity Group maximum limits.
3. Set the ICIPs that were under 2% to 2%.

The sum of the ICIPs should continue to be 100%.

It is possible that this Step G reduces the ICIPs for some Index Commodities to under 2%. If this occurs, repeat Step G, but do not reduce those ICIPs that were adjusted up to 2% in the prior iteration. If necessary, continue repeating Step G until no ICIP is under 2%.

Please note that Step G often does not have an effect on ICIPs, as individual Commodities with small ICIPs may have had their ICIPs increased to above 2% by previous steps. The minimum allocation of 2% imposed by Step G may be reduced due to liquidity concerns by Step H below.

Step H – *Adjusting for the Commodity Liquidity Threshold*

1. Divide (x) - the ICIP resulting from Step G for each Designated Contract by (y) the associated Commodity Liquidity Percentage determined for that Index Commodity.
2. If this result (x/y) is greater than 3.5, then the related ICIP will be reduced such that it will equal 3.5 times the relevant Commodity Liquidity Percentage.
3. The amount of weight reduction for all affected Designated Contracts is aggregated, and the value of this amount is allocated evenly to the ICIPs of the Designated Contracts with such ratio below a number, currently set at 2.0, which is determined from time to time by Bloomberg (excluding any Designated Contract that, were the ICIP so increased, would cause any of the maximum weight rules in Steps C, D or E to be exceeded) by adding such aggregate amount equally to the relevant ICIPs.

The percentages calculated in the final Step H, rounded to 8 decimal places, are the CIPs, which should sum to 100%.

The effect of the above steps is to distribute the weights of the Index into a broader allocation among Commodity Groups while still maintaining a strong relationship to the original Commodity Liquidity Percentages and Commodity Production Percentages. The specific calculations for 2015 are set forth in Appendix D.

### Section 2.7. Calculation of the Commodity Index Multipliers

On the CIM Determination Date, the CIPs determined during the related Calculation Period, along with the Settlement Prices determined on such CIM Determination Date<sup>23</sup>, are used to determine a “Commodity Index Multiplier” or “CIM” for each Designated Contract. This CIM is used to achieve the percentage weightings of the Designated Contracts, in U.S. dollar terms, indicated by their respective CIPs. The weighted average value, or “WAV,” of the Index is then determined by adding the product of these Settlement Prices and their respective CIMs.

To determine the respective CIMs, first calculate Initial Commodity Index Multipliers (“ICIMs”) as follows: each CIP will be multiplied by 1,000 and then divided by the Settlement Price (converted into U.S. dollars for the Lead Future) for the applicable Designated Contract on the CIM Determination Date. This Settlement Price is referred to in the calculations below as “FPD\_S.”

The ICIMs are then adjusted by the previous year’s WAV1 value (divided by 1,000) to maintain WAV continuity from one year to the next. A summary of the Commodity Index Multiplier calculations is as follows:

Step A – *Determine the Initial Commodity Index Multiplier*

$$\text{ICIM} = \text{CIP} * 1,000 / \text{FPD\_S}$$

Step B – *Determine an Adjustment Factor (the “Adjustment Factor”) to Maintain Continuity*

23. See Section 3.3 for the Settlement Prices to be used if a Market Disruption Event has occurred for any Designated Contract used in the calculation of the CIMs on the CIM Determination Date.



Table 8 below illustrates the calculations of the Commodity Index Percentages and Commodity Index Multipliers for 2015 (official CIP and CIM calculations use additional decimal precision than provided in Table 8).

**Table 8: CIM Calculations for the 2016 Bloomberg Commodity Index**

Commodity	2015 CIM	2016 FPD_S January 6th 2016	2015 CIM x FPD_S	2016 Weights	2016 ICIM	2016 CIM
Natural Gas	100.65052	2.289	230.3890511	8.45%	36.91062473	97.70766346
WTI Crude Oil	5.2728629	35.2	185.6047748	7.47%	2.122091761	5.61747814
Brent Crude Oil	4.526073	34.63	156.7379076	7.53%	2.174483685	5.756167
Unleaded Gas	88.510582	1.1927	105.566571	3.75%	31.42347615	83.18240221
ULS Diesel	74.061237	1.0976	81.2896133	3.83%	34.8855594	92.34702807
Live Cattle	66.175769	1.36525	90.34646796	3.57%	26.12429225	69.15471018
Lean Hogs	80.682663	0.60825	49.07522995	2.06%	33.90272092	89.74531508
Wheat (Chicago)	18.946301	4.6275	87.6740089	3.33%	7.189268504	19.03101431
Wheat (KC HRW)	6.2290882	4.61	28.71609656	1.15%	2.501388286	6.62152989
Corn	60.338032	3.5325	213.1440991	7.36%	20.831431	55.14375507
Soybeans	17.746768	8.6475	153.4651784	5.70%	6.595929459	17.46036163
Soybean Meal	0.2558761	268.7	68.75390538	2.84%	0.105867622	0.28024662
Soybean Oil	279.89277	0.2978	83.35206711	2.84%	95.28368032	252.2294282
Aluminum	0.0849728	1,474.00	125.2498335	4.60%	0.031198833	0.08258774
Copper	90.157164	2.088	188.2481586	7.63%	36.52896552	96.69735735
Zinc	0.0372584	1,543.75	57.51768588	2.53%	0.016373325	0.04334251
Nickel	0.0045013	8,606	38.73853204	2.36%	0.002741547	0.00725726
Gold	0.3244166	1,091.90	354.2304309	11.38%	0.104220725	0.27588706
Silver	8.5279387	13.976	119.1864716	4.21%	3.014584287	7.98003256
Sugar	891.97923	0.1442	128.6234052	3.63%	251.5430652	665.8702024
Cotton	82.609018	0.62	51.21759099	1.49%	24.08372581	63.75304112
Coffee	41.69644	1.1995	50.01487929	2.29%	19.12732805	50.63275266

**WAV1, Close on 4th Business Day 2016**

2647.141959

**Adjustment Factor**

2.64714959



Once the applicable futures month is determined, the price for each Designated Contract used to calculate WAV1 and WAV2 for each Business Day is obtained and converted into U.S. dollars. Some quote systems and data sources may report contract prices with decimals omitted or in a format that is not reflective of the actual U.S. dollar value. It is important to correctly convert each reported price into U.S. dollars per unit of the underlying contract. Table 10 below lists the reported Settlement Prices for the Lead Futures converted into U.S. dollars per unit for the 2016 CIM Determination Date.

**Table 10: 2016 CIM Determination Date Futures Settlement Prices Converted into U.S. Dollars**

Commodity	Contract Quotation Terms	Price on January 6th 2016	Price Conversion	Price in dollars
Natural Gas	\$/mmbtu	2.289	1	2.289
WTI Crude Oil	\$/bbl	35.2	1	35.2
Brent Crude Oil	\$/bbl	34.63	1	34.63
Unleaded Gas	¢/100 gallon	119.27	100	1.1927
ULS Diesel	¢/100 gallon	109.76	100	1.0976
Live Cattle	¢/lb	136.525	100	1.36525
Lean Hogs	¢/lb	60.825	100	0.60825
Wheat (Chicago)	¢/bu	462.75	100	4.6275
Wheat (KC HRW)	¢/bu	461	100	4.61
Corn	¢/bu	353.25	100	3.5325
Soybeans	¢/bu	864.75	100	8.6475
Soybean Meal	\$/short ton	268.7	1	268.7
Soybean Oil	¢/lb	29.78	100	0.2978
Aluminum	\$/mtons	1474	1	1474
Copper	¢/lb	208.8	100	2.088
Zinc	\$/metric ton	1543.75	1	1543.75
Nickel	\$/metric ton	8606	1	8606
Gold	\$/troy Oz	1091.9	1	1091.9
Silver	\$/troy Oz	13.976	1	13.976
Sugar	¢/lb	14.42	100	0.1442
Cotton	¢/lb	62	100	0.62
Coffee	¢/lb	119.95	100	1.1995

Once Settlement Prices are obtained for the Lead Future and Next Future for each Index Commodity, the WAVs are calculated in respect of each Business Day as follows: WAV1 is calculated by multiplying each Commodity Index Multiplier by the Settlement Price for the respective Lead Future for that day and summing the results. WAV2 is calculated by multiplying each Commodity Index Multiplier by the Settlement Price for the respective Next Future for that day and summing the results. The WAVs are rounded to 8 decimal places.

## Chapter 3. COMPUTATION OF THE INDEX, SUBINDICES AND RELATED INDICES

Bloomberg calculates BCOM (which is calculated on an “excess return” basis), a “total return” index based on BCOM (“BCOMTR”) and the non-U.S. dollar denominated versions of BCOM and BCOMTR identified in Appendix I.

In addition, Bloomberg publishes a “spot price” version of BCOM (“BCOMSP”). BCOMSP provides a general estimate of the trend in commodity prices, without the positive or negative return effects caused by rolling futures or the costs involved in actually holding physical commodities. BCOMSP is not “investable”, in the sense that returns of BCOMSP cannot be actually replicated in the underlying futures markets. See Appendix E for calculation details for BCOMSP.

Bloomberg also calculates Subindices and forward month versions of the Index and selected Subindices on an excess return and total return basis. Additional information in respect of these Subindices and forward month versions of the Indices is set forth in Appendices H and J, respectively.

### Section 3.1. Calculation of the Bloomberg Commodity Index

The BCOM Settlement Price is calculated on each Business Day using the applicable Settlement Prices for WAV1 and WAV2 on the current Business Day and the prior Business Day. The suffix “\_PS” designates the Settlement Price for the previous Business Day, and the suffix “\_S” designates the Settlement Price for the current Business Day. “BCOM\_S” indicates the value of BCOM on the current Business Day. The manner in which BCOM is calculated on a given Business Day depends on which of three periods during the month in which this day falls: the period prior to the Roll Period, the Roll Period, or the period following the Roll Period. The “Roll Period” is used in this Methodology to refer to the sixth through tenth Business Days of the month, during which time the value of BCOM is gradually shifted from the utilization of WAV1 for Index calculation to the utilization of WAV2, at the rate of 20% per Business Day.

#### Prior to the Roll Period

On Business Day 1 of the month, the Index is calculated as follows:

$$\text{BCOM\_S} = \text{BCOM\_PS} * \text{WAV1\_S} / \text{WAV2\_PS}^{26}$$

On Business Days 2 through 5 of the month, BCOM is calculated as follows:

$$\text{BCOM\_S} = \text{BCOM\_PS} * \text{WAV1\_S} / \text{WAV1\_PS}$$

#### During the Roll Period

On each day of the Roll Period, the dependence of BCOM is shifted, at the rate of 20% per day, from WAV1 to WAV2 as follows:

<sup>26</sup> On the first Business Day of the month, WAV1 is comprised of the same group of Designated Contracts that comprised the WAV2 of the prior month. Therefore, when calculating the change in the WAV1, it is divided by the WAV2 from the last Business Day of the prior month. This does not represent a “roll”, but rather a redesignation of the WAV2 to WAV1.



Day 1 of Roll Period (Business Day 6 of Month):

$$\text{BCOM\_S} = \text{BCOM\_PS} * (\text{WAV1\_S} * .80 + \text{WAV2\_S} * .20) / (\text{WAV1\_PS} * .80 + \text{WAV2\_PS} * .20)$$

Day 2 of Roll Period (Business Day 7 of Month):

$$\text{BCOM\_S} = \text{BCOM\_PS} * (\text{WAV1\_S} * .60 + \text{WAV2\_S} * .40) / (\text{WAV1\_PS} * .60 + \text{WAV2\_PS} * .40)$$

Day 3 of Roll Period (Business Day 8 of Month):

$$\text{BCOM\_S} = \text{BCOM\_PS} * (\text{WAV1\_S} * .40 + \text{WAV2\_S} * .60) / (\text{WAV1\_PS} * .40 + \text{WAV2\_PS} * .60)$$

Day 4 of Roll Period (Business Day 9 of Month):

$$\text{BCOM\_S} = \text{BCOM\_PS} * (\text{WAV1\_S} * .20 + \text{WAV2\_S} * .80) / (\text{WAV1\_PS} * .20 + \text{WAV2\_PS} * .80)$$

Day 5 of Roll Period (Business Day 10 of Month):

$$\text{BCOM\_S} = \text{BCOM\_PS} * (\text{WAV2\_S} / \text{WAV2\_PS})$$

*(3) After the Roll Period*

For the remainder of the month, the calculation of BCOM will be

$$\text{BCOM\_S} = \text{BCOM\_PS} * (\text{WAV2\_S} / \text{WAV2\_PS})$$

Following the preceding calculations, BCOM is rounded to 8 decimal places.

See Appendix G for special calculation procedures to be used if a Market Disruption Event occurs.

### **Section 3.2. Calculation of BCOM Total Return Index**

The BCOM Total Return Index reflects the returns on a fully collateralized investment in BCOM. This combines the returns of BCOM with the returns on cash collateral invested in Treasury Bills. These returns are calculated by using the most recent weekly auction high rate for 13 week (3 Month) U.S. Treasury Bills, as reported on the website <http://www.treasurydirect.gov/> published by the Bureau of the Public Debt of the U.S. Treasury, or any successor source, which is generally published once per week on Monday. The auction results are also available on the Bloomberg Terminal using the ticker: USB3MTA Index. To calculate BCOMTR:





**Definitions:**

- Calculation Date = date for which calculation is made.
- BCOM<sub>t</sub> = BCOM value on the Calculation Date.
- BCOM<sub>t-1</sub> = BCOM value on the Business Day prior to the Calculation Date.
- BCOMTR<sub>t</sub> = BCOMTR value on the Calculation Date.
- BCOMTR<sub>t-1</sub> = BCOMTR value on the Business Day prior to the Calculation Date.
- 3MR<sub>t</sub> = With respect to a Business Day d, the most recent weekly auction High Rate for 13 week (3 Month) U.S. Treasury Bills, as reported on the website <http://www.treasurydirect.gov/instit/annceresult/annceresult.htm> published by the Bureau of the Public Debt of the U.S. Treasury, or any successor page, on such Business Day d, provided, that if such auction High Rate is published on such Business Day d, TBill(d-1) shall be the rate published for the most recent previous auction.

This rate is then used for every day until the next rate is released; provided, however, that if a new rate is scheduled to be released on a given day, the prior rate is used for purposes of calculations in respect of such release date. The new rate is generally obtained on Monday and, accordingly, is first used in respect of Tuesday’s settlement calculations. In the event of a holiday or other disruption in the Treasury auction schedule, the last available rate is used until the next rate becomes available. Note that the prior day’s rate is used in calculating the value of TBD, to reflect the realization of an investment at that rate on day “t”.

- TBD = Treasury Bill Daily Return.
- DAYS = Number of calendar days from and including the prior Calculation Date to but excluding the current Calculation Date.
- Suffix \_S = Denotes the Settlement Price for the relevant index for the day indicated.

Step 1 - Calculate the Daily Excess Return (“DER”) as follows:

$$DER_t = BCOM_t / BCOM\_S_{t-1} - 1$$

Step 2 - Calculate the Treasury Bill Daily Return as follows:

$$TBD_t = \left[ \frac{1}{1 - 3MR_{t-1} \times (91 / 360)} \right]^{\frac{DAYS}{91}} - 1$$

Step 3 - Calculate the Total Return as follows:

$$BCOMTR_t = BCOMTR\_S_{t-1} \times (1 + DER_t + TBD_t)$$

BCOMTR<sub>t</sub> is rounded to 8 decimal places.

### Section 3.3. Market Disruption Events

BCOM is a futures-based index. From time to time, disruptions can occur in trading futures contracts on various commodity exchanges. The following rules will govern the means by which BCOM accommodates potential market disruptions:

“Market Disruption Event” means (a) the termination or suspension of, or material limitation or disruption in, the trading of any Lead Future or Next Future used in the calculation of the Index on that day, (b) the Settlement Price of any such contract reflects the maximum permitted price change from the previous day’s Settlement Price, (c) the failure of an exchange to publish official Settlement Prices for any such contract, or (d) with respect to any such contract that trades on the LME, a Business Day on which the LME is not open for trading. The existence of a Market Disruption Event shall be determined by Bloomberg.

If a Market Disruption Event occurs during the “Hedge Roll Period” (defined herein as the fifth through the ninth Business Days of each month) in any month other than January affecting any Index Commodity, then the daily roll of the relevant Designated Contract for such Index Commodity will be postponed until the next available Business Day on which a Market Disruption Event does not occur, and the calculation of BCOM will be adjusted to reflect this, as set forth in Appendix G. The Hedge Roll Period will be extended only if a Market Disruption Event affects an Index Commodity on the scheduled final Business Day comprising the Hedge Roll Period.

Note that a Market Disruption Event for any individual Index Commodity in BCOM during the Hedge Roll Period will not postpone the roll for any other Index Commodity for which a Market Disruption Event has not occurred.

If a Market Disruption Event occurs during the “Hedge Roll Period” scheduled for January of each year affecting any Index Commodity, then the rolling or rebalancing of the relevant Designated Contract will occur in all cases over five Business Days on which no Market Disruption Event exists at a rate of 20% per day, using the methodology set forth in Appendix G for the calculation of BCOM for every Business Day following a Market Disruption Event until the extended Hedge Roll Period is complete. The Hedge Roll Period in January, and the resulting rebalancing that is scheduled to occur, will be extended in all cases until the affected Designated Contract finishes rolling over five Business Days not affected by a Market Disruption Event. This means that the amounts of a particular Designated Contract rolled or rebalanced in January will always be distributed over five Business Days and will not, for example, “double up” on the Business Day following a Market Disruption Event.

Table 11 below shows an example of how the Applied Roll Percentage “ARP” that would be used in Appendix G, for two Index Commodities “1” and “2”, if a Market Disruption Event were to affect the Designated Contract for Index Commodity “2” on Business Day 7. During the months of February through and including December, the calculation methodology in Appendix G would be used only on Business Day 8. In January, however, the calculation methodology in Appendix G would be used on Business Days 8, 9 and 10, until Index Commodity “2” had finished rolling.

Table 11: Example of Applied Roll Percentage if Market Disruption Event

February – December				January			
	Business Day “t”	Business ARP 1, t	ARP 2,		Day “t”	ARP 1,	ARP 2, t
	1	100%	100%		1	100%	100%
	2	100%	100%		2	100%	100%
	3	100%	100%		3	100%	100%
	4	100%	100%		4	100%	100%
	5	100%	100%		5	100%	100%
	6	80%	80%		6	80%	80%
<b>MDE</b>	7	60%	60%	<b>MDE-&gt;</b>	7	60%	60%
<b>Use Appendix G</b>	8	40%	60%	<b>Use Appendix G</b>	8	40%	60%
	9	20%	20%	<b>Use Appendix G</b>	9	20%	40%
	10	0%	0%	<b>Use Appendix G</b>	10	0%	20%
	11	0%	0%		11	0%	0%
	12	0%	0%		12	0%	0%

If a Market Disruption Event occurs on a CIM Determination Date in respect of the applicable futures contract for an Index Commodity that is caused by a "limit event" (as defined by the applicable futures exchange), Bloomberg will use the current day's settlement price of such futures contract to determine the new Commodity Index Multipliers (CIM) with respect to such Index Commodity. If a Market Disruption Event occurs due to an exchange's failure to produce a settlement price of such futures contract, Bloomberg will use the first prior Business Day's settlement price on which a Market Disruption Event had not occurred with respect to such Index Commodity.



## Chapter 4. APPENDICES

### Appendix A Glossary of Terms

“*Adjustment Factor*” or “*AF*” means the factor by which the Commodity Index Multipliers are adjusted to provide continuity in WAV values from one year to the next. The Adjustment Factor is computed in accordance with Section 2.7 of the Methodology.

“*Bloomberg*” means Bloomberg Finance L.P. and its affiliates.

“*BCOM*” means the Bloomberg Commodity Index<sup>SM</sup>.

“*BCOM Total Return Index*” or “*Bloomberg Commodity Index Total Return*” or “*BCOMTR*” means the Index calculated on a total return basis as described in Section 3.2 of the Methodology.

“*BFIX*” or “*Bloomberg FX Fixings*” mean Bloomberg Generic Price (BGN) for currencies used in the index. This FX source is snapped at 30 minute intervals throughout the day and the London 16:00 fixings are used in calculation of the Bloomberg Commodity Indices. If an individual London 16:00 fixing is not available, Bloomberg will use expert judgment in determining the FX rates for the current business day.

“*Bloomberg Commodity Index 1 Month Forward*” or “*BCOMF1*” means a one-month forward version of BCOM calculated as described in Appendix J of the Methodology.

“*Bloomberg Commodity Index 2 Month Forward*” or “*BCOMF2*” means a two-month forward version of BCOM calculated as described in Appendix J of the Methodology.

“*Bloomberg Commodity Index 3 Month Forward*” or “*BCOMF3*” means three-month forward versions of BCOM and Subindices calculated as described in Appendix J of the Methodology.

“*Bloomberg Commodity Index Total Return 1 Month Forward*” or “*BCOMF1T*” means a one month forward version of BCOMTR calculated as described in Appendix J of the Methodology.

“*Bloomberg Commodity Index Total Return 2 Month Forward*” or “*BCOMF2T*” means a two month forward version of BCOMTR calculated as described in Appendix J of the Methodology.

“*Bloomberg Commodity Index Total Return 3 Month Forward*” or “*BCOMF3T*” means a three month forward version of BCOMTR calculated as described in Appendix J of the Methodology.

“*Business Day*” means any day on which the sum of the CIPs for those Index Commodities that are open for trading is greater than 50%. For purposes of this definition, the CIPs used during any calendar year are those calculated in the preceding year and applied on the CIM Determination Date for that year; provided, however, that on any day during such calendar year falling prior to or on the CIM Determination Date, the preceding year’s CIPs will be used for purposes of determining the existence of a Business Day.

“*Calculation Period*” means, for each year for which the Index is calculated, the sixth month of the year preceding such year of calculation.

“*CBOT*” means the Chicago Board of Trade.

“*CIM Determination Date*” means the date from which the values used in calculating the Commodity Index Multipliers will be determined for each year that the Index is calculated. This will be the fourth Business Day of that year, or as otherwise determined in accordance with Section 3.3 of the Methodology.

“*COMEX*” means the Commodities Exchange division of the New York Mercantile Exchange®.

“*Commodities*” means the commodities listed in Section 2.2 of the Methodology as eligible for inclusion in the Index.

“*Commodity Group*” means the group of Commodities to which each Commodity is assigned for the purpose of applying the diversification rules discussed in the Methodology. Section 2.2 of the Methodology lists the Commodity Groups and their corresponding Commodities.

“*Commodity Index Multiplier*” or “*CIM*” is a factor that is computed annually on the CIM Determination Date for each Index Commodity for purposes of implementing the annual re-weighting of the Index. It is calculated in accordance with Section 2.7 of the Methodology.

“*Commodity Index Percentage*” or “*CIP*” is derived by summing (i) 2/3 of the Commodity Liquidity Percentage for each Index Commodity and (ii) 1/3 of the Commodity Production Percentage for that Index Commodity, to determine the percentage weighting of each Index Commodity. The Commodity Index Percentages are adjusted in accordance with Section 2.6 of the Methodology.

“*Commodity Liquidity Percentage*” or “*CLP*” is the liquidity weighting assigned to each Index Commodity that is combined with the production weighting, or Commodity Production Percentage, assigned to each Index Commodity to derive the Commodity Index Percentage for that Index Commodity. The Commodity Liquidity Percentages are calculated in accordance with Section 2.3 of the Methodology.

“*Commodity Production Percentage*” or “*CPP*” is the production weighting assigned to each Index Commodity that is combined with the liquidity weighting, or the Commodity Liquidation Weighing, assigned to each Index Commodity to derive the Commodity Index Percentage for that Index Commodity. The Commodity Production Percentages are calculated in accordance with Section 2.4 of the Methodology.

“*Commodity Production Weight*” or “*CPW*” as set forth in Section 2.4 is the production data, adjusted to the same unit terms as the Designated Contract for that Commodity. This number is then divided by 1,000,000.

“*Commodity Sector*” refers to a Primary Commodity along with its Derivative Commodities. Commodity Sectors are described in Section 2.2 of the Methodology.

“*Commodity Sector Allocation Percentage*” or “*CSAP*” means, for each Index Commodity in a given Commodity Sector, (i) the Commodity Liquidity Percentage for that Index Commodity divided by (ii) the sum of the Commodity Liquidity Percentages for all Index Commodities in that Commodity Sector. The Commodity Sector Allocation Percentage is calculated as described in Section 2.5 of the Methodology.

“*Derivative Commodity*” means an Index Commodity that is principally produced or derived from another Index Commodity.











## Conversion Factors

Table 12 illustrates the source of the data used to derive the Conversion Factors.

**Table 12: Source of the data used to derive the Conversion Factors**

Commodity	Source	Table	Location
Crude Oil	Basic Petroleum Data Book, Volume XXII, Number 1, February 2006	Gallon, Barrel, Pound and Ton Equivalents for Converting Measures of Crude Petroleum and Refined Petroleum Products	Section XVI Table 3
Wheat, Corn and Soybeans	Agricultural Statistics 2009 United States Department of Agriculture, 2009 (ASUS)	Weights and Measures	Page vii, viii
Cattle	ASUS	Table 7-9 Cattle and calves: Production, disposition, cash receipts and gross income, United States, (2000-2000) and 7-66 Red Meat: Production, by class of slaughter, United States 2000-2009	VII-7 VII-40
Gold	Statistical Yearbook 49 <sup>th</sup> Issue, United Nations 2005 (SYUN)	Annex II A. Equivalents of Metric, British Imperial, and United States Units of Measure	Page 847
Silver	SYUN	Annex II A. Equivalents of Metric, British Imperial, and United States Units of Measure	Page 847
Platinum	SYUN	Annex II A. Equivalents of Metric, British Imperial, and United States Units of Measure	Page 847
Sugar	ASUS	Weights and Measures	Page vii
Cotton	ASUS	Weights and Measures	Page vii
Coffee	ASUS	Weights and Measures	Page vii
Natural Gas	American Society for Testing and Materials	Standard Metric Practice Guide -- (A Guide to the Use of SI -- the International System of Units, 1974)	Page 21

Appendix C Example of Roll Period Calculations

Table 13: Example of Roll Period Calculations

Unit Date	Business Day	WAV1	Roll Weight1	WAV2	Roll Weight2	BCOM
2-Jan-97	1	1196.764	1	1195.469	0	122.574
3-Jan-97	2	1196.121	1	1195.107	0	122.509
6-Jan-97	3	1214.668	1	1213.927	0	124.408
7-Jan-97	4	1214.314	1	1214.285	0	124.372
8-Jan-97	5	1220.453	1	1220.608	0	125.001
9-Jan-97	6	1218.382	0.8	1219.878	0.2	124.816
10-Jan-97	7	1216.373	0.6	1220.351	0.4	124.712
13-Jan-97	8	1207.51	0.4	1214.11	0.6	123.966
14-Jan-97	9	1209.179	0.2	1214.664	0.8	124.046
15-Jan-97	10	1226.924	0	1230.74	1	125.687
16-Jan-97	11	1212.804	0	1218.939	1	124.482
17-Jan-97	12	1206.098	0	1213.536	1	123.93
21-Jan-97	13	1194.815	0	1203.879	1	122.944
22-Jan-97	14	1197.584	0	1206.081	1	123.169
23-Jan-97	15	1197.393	0	1206.424	1	123.204

Appendix D Calculating the Commodity Index Percentages

Step 1: Allocate Commodity Production Percentages for Derivative Commodities and Additional Designated Contracts by utilizing the Commodity Liquidity Percentages as an allocation weighting. Multiply the Commodity Production Percentage for the Primary Commodity by the percentage that its Commodity Liquidity Percentage comprises of the total Commodity Liquidity Percentages for the Commodity Sector.

**Table 14: Example of Reallocating Commodity Production Percentages**

<b>Petroleum Sector</b>				
<b>Commodity</b>	<b>Commodity Liquidity %</b>	<b>Allocation</b>	<b>World Prod.</b>	<b>Reallocate = CPP</b>
WTI Crude Oil	22.9313%	39.4924%	62.9101%	24.8447%
Brent Crude Oil	23.1170%	39.8123%		25.0459%
Unleaded Gasoline	5.9140%	10.1852%		6.4075%
ULS Diesel	6.1027%	10.5102%		6.6119%
<b>Total</b>	<b>58.0651%</b>			<b>62.9101%</b>

<b>Soybean Sector</b>				
<b>Commodity</b>	<b>Commodity Liquidity %</b>	<b>Allocation</b>	<b>World Prod.</b>	<b>Reallocate = CPP</b>
Soybeans	4.7360%	68.5041%	2.4520%	1.6797%
Soybean Meal	1.0933%	15.8135%		0.3878%
Soybean Oil	1.0842%	15.6824%		0.3845%
<b>Total</b>	<b>6.9135%</b>			<b>2.4520%</b>

<b>Wheat Sector</b>				
<b>Commodity</b>	<b>Commodity Liquidity %</b>	<b>Allocation</b>	<b>World Prod.</b>	<b>Reallocate = CPP</b>
Wheat (Chicago)	1.3429%	80.2993%	3.8192%	3.0668%
Wheat (KC HRW)	0.3295%	19.7007%		0.7524%
<b>Total</b>	<b>1.6724%</b>			<b>3.8192%</b>

Step 2: Combine the CLPs and CPPs using 2/3 and 1/3 weighting. The combined weighting is called the Interim Commodity Index Percentage (ICIP).

**Table 15: Example of Determining Interim Commodity Index Percentages**

Commodity	2/3: Commodity Liquidity % CLP	1/3: Commodity Production % CPP	Combined:
Natural Gas	4.8521%	4.0453%	4.5832%
WTI Crude Oil	22.9313%	24.8447%	23.5691%
Brent Crude Oil	23.1170%	25.0459%	23.7600%
Unleaded	5.9140%	6.4075%	6.0785%
Heating Oil	6.1027%	6.6119%	6.2725%
Live Cattle	1.0190%	5.0142%	2.3507%
Lean Hogs	0.5892%	4.0164%	1.7316%
Wheat (Chicago)	1.3429%	3.0668%	1.9175%
Wheat (KC HRW)	0.3295%	0.7524%	0.4704%
Corn	3.1819%	4.1153%	3.4931%
Soybeans	4.7360%	1.6797%	3.7173%
Soybean Oil	1.0842%	0.3845%	0.8510%
Soybean Meal	1.0933%	0.3878%	0.8581%
Aluminum	1.6328%	2.0746%	1.7801%
Copper	4.0593%	3.1662%	3.7616%
Zinc	0.7222%	0.5613%	0.6685%
Nickel	0.6741%	0.6801%	0.6761%
Lead	0.3415%	0.4519%	0.3783%
Tin	0.1132%	0.1485%	0.1250%
Gold	10.3328%	2.3468%	7.6708%
Silver	3.1662%	0.4021%	2.2448%
Platinum	0.3086%	0.2126%	0.2766%
Sugar	1.0364%	1.5528%	1.2085%
Cotton	0.4266%	1.0375%	0.6302%
Coffee	0.6555%	0.7236%	0.6782%
Cocoa	0.2376%	0.2695%	0.2482%

Step 3: Eliminate any Commodities that have a combined ICIP of under 0.4%. The remaining Commodities are the Index Commodities.

Take the sum of the total of all ICIPs that fall under the 0.4% threshold. Allocate this sum to all Index Commodities that are at or above this 0.4% threshold. For any Commodity Sector that has more than one contract, the allocation will be equally split among these contracts (primary commodities, derivative commodities, and commodities with multiple designated contracts, receive equal split). Set the ICIP of the Commodities that fall under 0.4% to zero. The sum of all the ICIPs should be 100%. The following table illustrates this step:



Table 16: Example of Eliminating Commodities under 0.4% and Reallocating ICIPs

Commodity	Combined	0.4% Cutoff	Reallocated ICIP
Natural Gas	4.5832%	0.0000%	4.6475%
WTI Crude Oil	23.5691%	0.0000%	23.5851%
Brent Crude Oil	23.7600%	0.0000%	23.7761%
Unleaded	6.0785%	0.0000%	6.0946%
ULS Deisel	6.2725%	0.0000%	6.2885%
Live Cattle	2.3507%	0.0000%	2.4150%
Lean Hogs	1.7316%	0.0000%	1.7959%
Wheat (Chicago)	1.9175%	0.0000%	1.9497%
Wheat (KC HRW)	0.4704%	0.0000%	0.5026%
Corn	3.4931%	0.0000%	3.5573%
Soybeans	3.7173%	0.0000%	3.7387%
Soybean Oil	0.8510%	0.0000%	0.8724%
Soybean Meal	0.8581%	0.0000%	0.8795%
Aluminum	1.7801%	0.0000%	1.8444%
Copper	3.7616%	0.0000%	3.8259%
Zinc	0.6685%	0.0000%	0.7328%
Nickel	0.6761%	0.0000%	0.7404%
Lead	0.3783%	0.3783%	0.0000%
Tin	0.1250%	0.1250%	0.0000%
Gold	7.6708%	0.0000%	7.7351%
Silver	2.2448%	0.0000%	2.3091%
Platinum	0.2766%	0.2766%	0.0000%
Sugar	1.2085%	0.0000%	1.2728%
Cotton	0.6302%	0.0000%	0.6945%
Coffee	0.6782%	0.0000%	0.7425%
Cocoa	0.2482%	0.2482%	0.0000%
<b>Total</b>		1.0281%	100.0000%

Step 4: Reduce any Commodity Sector that has a total ICIP greater than 25% down to 25%. Take the difference between the Commodity Sector total and 25%, and equally allocate this difference among the remaining ICIPs, but not to the ICIPs reduced to zero in the preceding step. For any Commodity Sector that has more than one contract, the allocation will be equally split among these contracts (primary commodities, derivative commodities, and commodities with multiple designated contracts, receive equal split).

Once this reallocation is done, allocate 25% back to this Commodity Sector, in proportion to the original distribution of ICIPs within this Commodity Sector. This proportion weighting is calculated by summing the original ICIPs within this Commodity Sector, then dividing each ICIP within this Commodity Sector by that sum. Multiply 25% by this quotient, which then equals the ICIP for each Index Commodity in the Commodity Sector. The following table illustrates this step:

Table 17: Example of Reducing Sectors over 25% and Reallocating ICIPs

Commodity	ICIP	Sector Totals	Difference with 25%	Allocation	ICIP
Natural Gas	4.6475%				6.9637%
WTI Crude Oil	23.5851%	59.7443%	34.7443%	9.8692%	9.8692%
Brent Crude Oil	23.7761%			9.9491%	9.9491%
Unleaded	6.0946%			2.5503%	2.5503%
Heating Oil	6.2885%			2.6314%	2.6314%
Live Cattle	2.4150%				4.7313%
Lean Hogs	1.7959%				4.1121%
Wheat (Chicago)	1.9497%	2.4522%			3.1078%
Wheat (KC HRW)	0.5026%				1.6607%
Corn	3.5573%				5.8736%
Soybeans	3.7387%	5.4906%			4.5108%
Soybean Oil	0.8724%				1.6445%
Soybean Meal	0.8795%				1.6516%
Aluminum	1.8444%				4.1606%
Copper	3.8259%				6.1421%
Zinc	0.7328%				3.0491%
Nickel	0.7404%				3.0566%
Lead	0.0000%				0.0000%
Tin	0.0000%				0.0000%
Gold	7.7351%				10.0514%
Silver	2.3091%				4.6254%
Platinum	0.0000%				0.0000%
Sugar	1.2728%				3.5890%
Cotton	0.6945%				3.0108%
Coffee	0.7425%				3.0587%
Cocoa	0.0000%				0.0000%
<b>Total</b>			34.7443%		100.0000%

Step 5: The next step is to reduce any ICIP or ICIPs for a single Commodity over 15% down to 15%, and allocate the difference equally to the other Designated Contracts, except for those eliminated under the 0.4% threshold rule. For any Commodity Sector that has more than one contract, the allocation will be equally split among these contracts (primary commodities, derivative commodities, and commodities with multiple designated contracts, receive equal split).



Table 18: Example of Reducing Single Commodities over 15% and Reallocating ICIPs

Commodity	ICIP	> 15%?	New ICIP
Natural Gas	6.9637%		7.2649%
WTI Crude Oil	9.8692%	4.8183%	7.4698%
Brent Crude Oil	9.9491%		7.5302%
Unleaded	2.5503%		2.7008%
Heating Oil	2.6314%		2.7820%
Live Cattle	4.7313%		5.0324%
Lean Hogs	4.1121%		4.4133%
Wheat (Chicago)	3.1078%		3.2584%
Wheat (KC HRW)	1.6607%		1.8113%
Corn	5.8736%		6.1747%
Soybeans	4.5108%		4.6112%
Soybean Oil	1.6445%		1.7449%
Soybean Meal	1.6516%		1.7520%
Aluminum	4.1606%		4.4618%
Copper	6.1421%		6.4433%
Zinc	3.0491%		3.3502%
Nickel	3.0566%		3.3578%
Lead	0.0000%		0.0000%
Tin	0.0000%		0.0000%
Gold	10.0514%		10.3525%
Silver	4.6254%		4.9265%
Platinum	0.0000%		0.0000%
Sugar	3.5890%		3.8902%
Cotton	3.0108%		3.3119%
Coffee	3.0587%		3.3599%
Cocoa	0.0000%		0.0000%
<b>Total</b>		4.8183%	100.0000%

Step 6: The next step is to reduce any Commodity Group ICIP sum over 33% down to 33%. Once this reallocation is done, allocate 33% back to this Commodity Group, in proportion to the previous distribution of ICIPs within this Commodity Group. Then reallocate the difference of this group above 33% to the other commodities, except for those which were eliminated by the 0.4% threshold rule. For any Commodity Sector that has more than one contract, the allocation will be equally split among these contracts (primary commodities, derivative commodities, and commodities with multiple designated contracts, receive equal split).



Table 19: Example of Reducing Commodity Groups over 33% and Reallocating ICIPs

Commodity	ICIP	> 33%?	Allocation	New ICIP
Natural Gas	7.2649%	27.7477%	0.0000%	7.2649%
WTI Crude Oil	7.4698%		0.0000%	7.4698%
Brent Crude Oil	7.5302%		0.0000%	7.5302%
Unleaded	2.7008%		0.0000%	2.7008%
Heating Oil	2.7820%		0.0000%	2.7820%
Live Cattle	5.0324%	9.4457%	0.0000%	5.0324%
Lean Hogs	4.4133%		0.0000%	4.4133%
Wheat (Chicago)	3.2584%	19.3524%	0.0000%	3.2584%
Wheat (KC HRW)	1.8113%		0.0000%	1.8113%
Corn	6.1747%		0.0000%	6.1747%
Soybeans	4.6112%		0.0000%	4.6112%
Soybean Oil	1.7449%		0.0000%	1.7449%
Soybean Meal	1.7520%		0.0000%	1.7520%
Aluminum	4.4618%	17.6131%	0.0000%	4.4618%
Copper	6.4433%		0.0000%	6.4433%
Zinc	3.3502%		0.0000%	3.3502%
Nickel	3.3578%		0.0000%	3.3578%
Lead	0.0000%		0.0000%	0.0000%
Tin	0.0000%		0.0000%	0.0000%
Gold	10.3525%	15.2790%	0.0000%	10.3525%
Silver	4.9265%		0.0000%	4.9265%
Platinum	0.0000%		0.0000%	0.0000%
Sugar	3.8902%	10.5620%	0.0000%	3.8902%
Cotton	3.3119%		0.0000%	3.3119%
Coffee	3.3599%		0.0000%	3.3599%
Cocoa	0.0000%		0.0000%	0.0000%
<b>Total</b>		100.0000%		100.0000%

Step 7: Set the ICIPs for gold and silver to equal their Commodity Liquidity Percentages. Take the difference of the ICIP and the CLP for gold and silver, and take the sum of these differences. Equally allocate this difference by adjusting all the other ICIPs except for those affected by the 0.4% cutoff, the 25% sector, the 15% commodity, or 33% group maximums. For any Commodity Sector that has more than one contract, the allocation will be equally split among these contracts (primary commodities, derivative commodities, and commodities with multiple designated contracts, receive equal split).



Table 20: Example of Gold and Silver ICIP adjustments

Commodity	ICIP	Precious CLP	Difference	New ICIP
Natural Gas	7.2649%			7.4018%
WTI Crude Oil	7.4698%			7.4698%
Brent Crude Oil	7.5302%			7.5302%
Unleaded	2.7008%			2.7008%
Heating Oil	2.7820%			2.7820%
Live Cattle	5.0324%			5.1694%
Lean Hogs	4.4133%			4.5502%
Wheat (Chicago)	3.2584%			3.3268%
Wheat (KC HRW)	1.8113%			1.8798%
Corn	6.1747%			6.3117%
Soybeans	4.6112%			4.6568%
Soybean Oil	1.7449%			1.7905%
Soybean Meal	1.7520%			1.7976%
Aluminum	4.4618%			4.5987%
Copper	6.4433%			6.5802%
Zinc	3.3502%			3.4872%
Nickel	3.3578%			3.4947%
Lead	0.0000%			0.0000%
Tin	0.0000%			0.0000%
Gold	10.3525%	10.3328%	0.0197%	10.3328%
Silver	4.9265%	3.1662%	1.7603%	3.1662%
Platinum	0.0000%			0.0000%
Sugar	3.8902%			4.0271%
Cotton	3.3119%			3.4489%
Coffee	3.3599%			3.4968%
Cocoa	0.0000%			0.0000%
<b>Total</b>			1.7800%	100.0000%

Step 8: The next step is to increase any ICIP that falls below the 2% minimum up to 2%. Calculate the difference between each of these Commodities' ICIPs and 2%. Decrease the ICIPs of the remaining Index Commodities by allocating the sum of all these differences so that each such Index Commodity receives an equal allocation. Do not reduce those ICIPs affected by the 25%, 33%, 15%, 0.5%, gold and silver, or 2% rules. Repeat this step if necessary so that no ICIP falls below 2%.

Step 9: The next step is to adjust the weight of any Index Commodity if the ratio of the ICIP compared to its liquidity percentage is greater than a threshold currently set at 3.5, though this threshold is subject to revision by Bloomberg from time to time. The weight that is taken from any such Index Commodity is allocated to the Index Commodities that have such ratio below a threshold to be determined each year by Bloomberg (excluding any Index Commodity that, were the ICIP so increased, would cause any of the maximum weight rules in Steps C, D or E of Section 2.6 to be exceeded) by adding such aggregate amount to the relevant ICIPs in equal amounts.

Table 21: Example CIP Adjustment if the ICIP to Liquidity Percentage is Greater than 3.5

Commodity	Ratio	> 3.5?	Ranked By Ratio < 2.0	ICIP	Final CIP
Natural Gas	0.0740		TRUE	8.4488%	8.4488%
WTI Crude Oil	0.3313				7.4698%
Brent Crude Oil	0.3313				7.5302%
Unleaded	0.4664		TRUE	3.7479%	3.7479%
Heating Oil	0.4657		TRUE	3.8290%	3.8290%
Live Cattle	5.3012	TRUE		3.5666%	3.5666%
Lean Hogs	7.9741	TRUE		2.0621%	2.0621%
Wheat (Chicago)	2.3858				3.3268%
Wheat (KC HRW)	5.4788	TRUE		1.1531%	1.1531%
Corn	1.8509		TRUE	7.3587%	7.3587%
Soybeans	0.9642		TRUE	5.7038%	5.7038%
Soybean Oil	1.5663		TRUE	2.8375%	2.8375%
Soybean Meal	1.6311		TRUE	2.8447%	2.8447%
Aluminum	2.7281				4.5987%
Copper	1.5927		TRUE	7.6272%	7.6272%
Zinc	4.9492	TRUE		2.5276%	2.5276%
Nickel	5.6149	TRUE		2.3594%	2.3594%
Lead	0.0000				0.0000%
Tin	0.0000				0.0000%
Gold	1.0000		TRUE	11.3799%	11.3799%
Silver	1.0000		TRUE	4.2132%	4.2132%
Platinum	0.0000				0.0000%
Sugar	3.4710	TRUE		3.6273%	3.6273%
Cotton	7.7580	TRUE		1.4932%	1.4932%
Coffee	5.3400	TRUE		2.2943%	2.2943%
Cocoa	0.0000				0.0000%
<b>Total</b>					<b>100.0000%</b>

Appendix E Summary of Calculations

### Definitions:

Lead Futures	Futures contracts included in the WAV1 calculation, as shown in Tables 25, 26 and 27.
Next Futures	Futures contracts included in the WAV2 calculation, as shown in Tables 25, 26 and 27.
Array	Indexed list of values. Variables defined in <b>Bold</b> type are Arrays. When the Array variable is followed by a subscript $i$ , this indicates the $i^{\text{th}}$ value of that array.

Other non-array variables may be followed by the subscript  $t$ , or  $t - 1$ . This denotes the Business Day of the month, with  $t - 1$  denoting the prior Business Day's values. When  $t$  is the first Business Day of the month,  $t - 1$  is the last Business Day of the prior month.

$Af^y$	Adjustment Factor used to normalize the CIMs for that year. This is calculated on the fourth Business Day of the year.
$CIP^y$	The CIPs to be implemented for the new year.
<b>CIM1</b>	Commodity Index Multiplier Array applied to the Lead Futures.
<b>CIM2</b>	Commodity Index Multiplier Array applied to the Next Futures.
<b>ICIM</b>	Interim Commodity Index Multiplier Array used in calculating the final CIM.
<b>FPD1</b>	Lead Futures contract price Array in U.S. dollars.
<b>FPD2</b>	Next Futures contract price Array in U.S. dollars.
WAV1	Weighted Average Value of $FPD1 \times CIM1$ .
TWAV	Value of WAV1 as of the CIM Determination Date.
WAV2	Weighted Average Value of $FPD2 \times CIM2$ .
$N$	Total number of Index Commodities.
BCOM	Bloomberg Commodity Index.
BCOMTR	BCOM Total Return Index.
$_S$	Denotes Settlement Price.
DER	Daily Excess Return.
TBD	Treasury Bill Daily Return.
<b>RW</b>	Roll Weights Array, $\{1, 1, 1, 1, 1, .80, .60, .40, .20, 0, 0, 0, \dots, 0\}$ . This designates the percentage weightings applied to the WAV1 and WAV2 during the Roll. For WAV2, $(1 - RW_t)$ is used as described below.
BCOM SP	A "spot price" version of BCOM, based on the futures contract prices used to calculate BCOM. This index is not "investable", but provides a general estimate of the trend in commodity prices without the positive or negative return effects which may be caused by the rolling process, or the costs involved in actually holding physical commodities.

### Note on Array Size:

The **CIM1**, **CIM2**, **ICIM**, **FPD1** and **FPD2** array sizes are the number of commodity futures contracts. For the 2016 BCOM, this number is 22. The **RW**, Roll Weights Array size is 31, which is the maximum possible Business Days per month.

### Note on Rounding:

The CIM1, CIM2, WAV1, WAV2, BCOM, BCOMTR and BCOM SP values are rounded to 8 decimal places following calculation.

Formulas:

$$ICIM_i = CIP^{yr}_i \times 1000 / FPD1\_S_i, i = 1 \text{ to } N.$$

This calculation is done on the fourth Business Day of the year, using prices from the CIM Determination Date, once all Designated Contracts have published Settlement Prices for that day.

$$WAV1 = \sum_{i=1}^N CIM1_i \times FPD1_i$$

$$WAV2 = \sum_{i=1}^N CIM2_i \times FPD2_i$$

$$AF^{yr} = TWAV / 1000$$

$$CIM2_i = ICIM_i \times AF^{yr}, i = 1 \text{ to } N$$

**CIM1** = **CIM2** on day after last day of Roll Period in January

$BCOM_t = BCOM\_S_{t-1} \times (WAV1_t / WAV2\_S_{t-1})$  on Business Day 1 of the month

$$BCOM_t = BCOM\_S_{t-1} \times \frac{[WAV1_t \times RW_t + WAV2_t \times (1-RW_t)]}{[WAV1\_S_{t-1} \times RW_t + WAV2\_S_{t-1} \times (1-RW_t)]}$$

{where t = 2<sup>nd</sup> Business Day to the last Business Day of month}

$BCOMTR_t = BCOMTR\_S_{t-1} \times (1 + DER_t + TBD_t)$  {Complete calculations in Section 3.2}

$BCOM = 100$  on January 2, 1991

$BCOMTR = 100$  on January 2, 1991

### Calculation of Spot Price Version of BCOM

$$BCOM\ SP_t = [WAV1_t \times RW_t + WAV2_t \times (1-RW_t)] / 10$$

### Calculation of Spot Price Versions of BCOM Subindices

For each year “t”, on the CIM Determination Date, the fourth business day of the year, calculate a Subindex Adjustment Factor “SAF” as follows:

$$SAF_t = (SAF_{t-1} \times \sum (FPD\_S_{it} \times CIM\_Old_i)) / (\sum FPD\_S_{it} \times CIM\_New_i)$$

SAF<sub>t</sub> is then rounded to 8 decimal places.

FPD<sub>S</sub> is the front month futures price in U.S. dollars.

To calculate the Spot Subindices:

On January 2, 1991 the value equals 100.000



On each Business Day “v”

$$\text{SpotSub}_v = \text{SpotSub}_{v-1} \times \frac{[\text{SubWAV1}_v \times \text{RW}_v] + \text{SubWAV2}_v \times (1 - \text{RW}_v)}{[\text{SubWAV1}_{v-1} \times \text{RW}_{v-1}] + \text{SubWAV2}_{v-1} \times (1 - \text{RW}_{v-1})}$$

SpotSub<sub>v</sub> is then rounded to 8 decimal places

Additional note regarding SubWAV1 and SubWAV2:

SubWav1 and SubWav2 are calculated using the CIM for each Index Commodity multiplied by the SAF<sub>t</sub> for that year:

$$\text{SubWAV}_j = \sum_{i=1}^N \text{CIM}_{j,i} \times \text{FPD}_{j,i} \times \text{SAF}_t$$

where j = 1 and 2

where i corresponds to the specific commodity in the Subindex, and t corresponds to the same year as that in which the CIM was calculated.

SubWAV<sub>j</sub> is rounded to 8 decimal places

## Appendix F CPWs and Lead Futures Prices for 2016 BCOM

Table 22: CPWs for 2016 BCOM

Commodity	2008	2009	2010	2011	2012
Natural Gas	35,186,517.970	34,961,394.730	35,483,584.050	37,020,250.590	37,568,746.350
Crude Petroleum	31,598.009	31,294.663	32,162.546	32,315.726	33,018.468
Beef and Fresh Veal	215,662.407	215,685.495	217,571.108	216,450.816	217,935.238
Pork	226,953.260	231,409.136	237,153.587	238,136.904	245,589.395
Wheat	25,103.554	25,232.644	23,858.619	25,697.566	24,672.730
Corn	32,699.712	32,289.942	33,512.499	34,945.815	34,562.340
Soybeans	8,497.774	8,208.959	9,741.504	9,622.672	8,854.171
Aluminum	39.700	37.300	41.200	44.400	45.900
Copper	18.300	18.300	19.100	19.700	20.100
Zinc	11.700	11.400	12.800	13.200	12.800
Nickel	1,390.000	1,370.000	1,440.000	1,620.000	1,760.000
Lead	8.730	8.860	9.530	10.100	10.200
Tin	334.000	327.000	335.000	337.000	321.000
Gold	73,946.725	79,733.860	82,948.935	85,842.503	86,485.518
Silver	684,810.975	716,961.725	768,402.925	774,833.075	819,844.125
Platinum	6,205.095	5,915.738	6,172.944	6,430.150	5,883.587
Sugar	336,806.717	311,160.349	324,130.140	355,407.113	377,334.283
Cotton	49,513.184	46,025.373	52,008.248	57,607.238	58,492.478
Coffee	18,737.173	17,170.965	18,668.122	18,507.365	20,304.042
Cocoa	4.266	4.212	4.341	4.627	4.646

Table 23: Lead Futures Prices for 2016 BCOM

Commodity	2010	2011	2012	2013	2014
Natural Gas	\$4.52	\$4.21	\$2.90	\$3.70	\$4.30
WTI Crude Oil	\$80.37	\$96.36	\$95.24	\$97.39	\$94.21
Brent Crude Oil	\$80.90	\$110.49	\$110.90	\$107.84	\$101.37
Unleaded Gasoline	\$2.13	\$2.82	\$2.88	\$2.83	\$2.65
ULS Diesel	\$2.16	\$2.97	\$3.03	\$2.99	\$2.81
Live Cattle	\$0.94	\$1.15	\$1.24	\$1.28	\$1.50
Lean Hogs	\$0.76	\$0.90	\$0.85	\$0.89	\$1.05
Wheat (Chicago)	\$5.79	\$7.23	\$7.55	\$6.92	\$5.91
Wheat (KC HRW)	\$5.99	\$8.20	\$7.85	\$7.43	\$6.67
Corn	\$4.21	\$6.77	\$6.93	\$5.72	\$4.19
Soybeans	\$10.24	\$13.32	\$14.54	\$13.56	\$12.18
Soybean Oil	\$0.41	\$0.56	\$0.53	\$0.46	\$0.37
Soy Meal	\$290.92	\$349.97	\$421.18	\$408.72	\$403.14
Aluminum	\$2,193.39	\$2,468.94	\$2,059.06	\$1,886.69	\$1,877.65
Copper	\$7,522.72	\$9,027.01	\$8,026.48	\$7,383.46	\$6,896.06
Zinc	\$2,184.46	\$2,266.06	\$1,968.52	\$1,939.96	\$2,156.33
Nickel	\$21,896.92	\$23,404.35	\$17,664.29	\$15,227.96	\$16,693.29
Lead	\$2,161.33	\$2,434.08	\$2,086.38	\$2,171.54	\$2,119.44
Tin	\$19,886.67	\$26,734.67	\$21,128.42	\$22,306.67	\$21,964.50
Gold	\$1,214.57	\$1,563.86	\$1,679.78	\$1,432.57	\$1,261.05
Silver	\$19.71	\$35.53	\$31.67	\$24.28	\$19.11
Platinum	\$1,606.95	\$1,746.80	\$1,559.76	\$1,495.28	\$1,392.24
Sugar	\$0.22	\$0.27	\$0.22	\$0.18	\$0.17
Cotton	\$0.89	\$1.36	\$0.80	\$0.83	\$0.76
Coffee	\$1.60	\$2.56	\$1.81	\$1.27	\$1.78
Cocoa	\$2,971.50	\$2,989.17	\$2,325.50	\$2,363.92	\$2,985.17







(1) Determine the Actual Roll Percentage applied to each Index Commodity. For any Index Commodity not involved in a Market Disruption Event, this ARP is equal to the  $RW_t$ .

For any Index Commodity that is involved in a Market Disruption Event, the ARP is equal to the prior Business Day's ARP.

For all Index Commodities 1 through N:

$$ARP_{i,t} = RW_t \quad \text{if NOT involved in a Market Disruption Event, otherwise}$$

$$ARP_{i,t} = ARP_{i,t-1} \quad \text{if involved in a Market Disruption Event}$$

During the month of January the following special rule is applied for all Index Commodities 1 through N:

For Business Days 1 through 5,  $ARP_{i,t}$  equals 1 for all Index Commodities. For Business Days 6 through the end of the Hedge Roll Period, the following rule will apply:

$$ARP_{i,t} = \text{The maximum of 0 (Zero) or } (ARP_{i,t-1} - 20\%), \text{ if NOT involved in a Market Disruption Event, otherwise}$$

$$ARP_{i,t} = ARP_{i,t-1} \quad \text{if involved in a Market Disruption Event}$$

(2) Calculate the Adjusted Change ("AC") as follows. For each Lead Future in BCOM, calculate the Settlement Price in U.S. dollars for day t, multiplied by the Actual Roll Percentage for this Index Commodity, multiplied by the CIM1 for that commodity.

For each Next Future in BCOM, calculate the Settlement Price in U.S. dollars for day t, multiplied by the (1-Actual Roll Percentage for this commodity), multiplied by the CIM2 for that commodity.

Sum these products for all Index Commodities. This sum is the numerator.

The denominator is calculated in the same fashion, substituting the prior day's Settlement Prices for all Index Commodities. (Continue to use the current day's ARPs and (1-ARP)s.)

The formula is expressed as follows:

$$AC = \frac{\sum_{i=1}^N \{ FPD1\_S_{i,t} \times CIM1_i \times ARP_{i,t} + FPD2\_S_{i,t} \times CIM2_i \times (1 - ARP_{i,t}) \}}{\sum_{i=1}^N \{ FPD1\_S_{i,t-1} \times CIM1_i \times ARP_{i,t} + FPD2\_S_{i,t-1} \times CIM2_i \times (1 - ARP_{i,t}) \}}$$

(3) Calculate the Settlement Price for  $BCOM_t$ :

$$BCOM\_S_t = AC \times BCOM\_S_{t-1}$$

$BCOM\_S_t$  value is rounded to 8 decimal places.

## Appendix H Individual Subindex Calculations

Launched in July 1998, the Bloomberg Commodity Index family includes eight sector Subindices, multiple forward month indices, indices for each individual commodity, indices excluding an individual commodity or sector, currency hedged versions, a Roll Select index series, 2-4-6 Forward Blend, and other specialty indices. Also available are total return versions of each of the excess return indices and sub-indices as well as Spot indices for the benchmark and sector indices. For an up-to-date comprehensive list of Bloomberg Commodity Indices, please refer to the link below.

<http://www.bloombergindices.com>

In addition, Bloomberg calculates a Subindex in respect of every individual Index Commodity. The individual commodity Subindex utilizes the CIM that applies to that commodity. In addition, although cocoa was deleted from the composite index as of the January 2005 reweighting period, an individual Subindex is calculated for cocoa, as well as for Platinum, Lead, Tin, Gas Oil, Orange Juice, and Feeder Cattle, in order to facilitate historical and future data analysis. Individual Subindices will continue, subject to Bloomberg's discretion as Index administrator, to be calculated for each of the Index Commodities comprising the 2015 BCOM even if in the future a commodity is deleted from the Index. When Brent Crude Oil was added to the Index in 2012, UBS launched the Bloomberg Composite Crude Oil Subindex. The Bloomberg Composite Crude Oil Subindex tracks the performance of the historical crude components of the index: i.e. WTI only prior to the January 2012 rebalance and Brent Crude Oil and WTI Crude Oil in their respective relative weights from and after the January 2012 rebalancing. This means that the Bloomberg WTI Crude Oil Subindex and the Bloomberg Composite Crude Oil Subindex are identical in their reported data prior to January 2012. Similarly, in 2013, UBS launched the Bloomberg Composite Wheat Subindex. The Bloomberg Composite Wheat Subindex tracks the performance of the historical Wheat components of the index: i.e. Chicago Wheat (CBOT) only prior to the January 2013 rebalance and KC HRW Wheat (CBOT) and Chicago Wheat (CBOT) in their respective relative weights from and after the January 2013 rebalancing. This means that the Bloomberg Wheat Subindex and the Bloomberg Composite Wheat Subindex are identical in their reported data prior to January 2013.

### Calculation Method:

The calculation of the Subindices will follow the same rules, including rounding conventions, as the calculation of BCOM, with the following difference:

A Sub-WAV1 and Sub-WAV2 for each Subindex is calculated on a daily basis using the Lead Future and Next Future for each Index Commodity included in that Subindex. These Sub-WAVs are the sum of the product of the prices of the Index Commodities included in that Subindex and their respective CIMs, as determined for BCOM on the CIM Determination Date<sup>27</sup>. In the event that a CIM is zero for an Index Commodity, the individual Subindex calculated in respect of that particular commodity will continue to use the most recent non-zero CIM for all future calculations or, 1.00, in respect of commodities that have never been included in the Index.

<sup>27</sup> There will be no modifications or additional normalizations to the CIMs for use in the Sub-Indices.

The Sub-WAVs, and Subindex names are designated as follows:

Subindex	Sub-WAVs	Excess Return	Total Return
Energy	EnWAV1, EnWAV2	BCOMEN	BCOMENTR
Petroleum	PeWAV1, PeWAV2	BCOMPE	BCOMPETR
Livestock	LiWAV1, LiWAV2	BCOMLI	BCOMLITR
Grains	GrWAV1, GrWAV2	BCOMGR	BCOMGRTR
Industrial Metals	InWAV1, InWAV2	BCOMIN	BCOMINTR
Precious Metals	PrWAV1, PrWAV2	BCOMPR	BCOMPRTTR
Softs	SoWAV1, SoWAV2	BCOMSO	BCOMOTR
Ex-Energy	ExWAV1, ExWAV2	BCOMXE	BCOMXETR
Ex-Ag & Livestock	XvWAV1, XvWAV2	BCOMXAL	BCOMXALT
Ex-Industrial Metals	XiWAV1, XiWAV2	BCOMXIM	BCOMXIMT
Ex-Precious	XbWAV1, XbWAV2	BCOMXPM	BCOMXPMT
Ex-Agriculture	XaWAV1, XaWAV2	BCOMXAG	BCOMXAGT
Ex-Livestock	XiWAV1, XiWAV2	BCOMXLI	BCOMXLIT
Ex-Softs	XsWAV1, XsWAV2	BCOMXSO	BCOMXSOT
Ex-Grains	XgWAV1, XgWAV2	BCOMXGR	BCOMXGRT
Ex-Petroleum	XpWAV1, XpWAV2	BCOMXPE	BCOMXPET
Agriculture	AgWAV1, AgWAV2	BCOMAG	BCOMAGTR
Composite Crude	CrWAV1, CrWAV2	BCOMCR	BCOMCRT
Composite Wheat	WhWAV1, CrWAV2	BCOMCW	BCOMCWT
Natural Gas	NgWAV1, NgWAV2	BCOMNG	BCOMNGTR
WTI Crude Oil	CIWAV1, CIWAV2	BCOMCL	BCOMCLTR
Brent Crude Oil	CoWAV1, CoWAV2	BCOMCO	BCOMCOT
Unleaded Gasoline	RBWAV1, RBWAV2	BCOMRB	BCOMRBTR
ULS Diesel	HoWAV1, HoWAV2	BCOMHO	BCOMHOTR
Live Cattle	LcWAV1, LcWAV2	BCOMLC	BCOMLCTR
Lean Hogs	LhWAV1, LhWAV2	BCOMLH	BCOMLHTR
Wheat (Chicago)	W_WAV1, W_WAV2	BCOMWH	BCOMWHTR
Wheat (KC HRW)	KW_WAV1, W_WAV2	BCOMKW	BCOMKWTR
Corn	C_WAV1, C_WAV2	BCOMCN	BCOMCNTR
Soybeans	S_WAV1, S_WAV2	BCOMSY	BCOMYTR
Aluminum	AlWAV1, AlWAV2	BCOMAL	BCOMALTR
Copper	HgWAV1, HgWAV2	BCOMHG	BCOMHGTR
Zinc	ZnWAV1, ZnWAV2	BCOMZS	BCOMZSTR
Nickel	NiWAV1, NiWAV2	BCOMNI	BCOMNITR
Gold	GcWAV1, GcWAV2	BCOMGC	BCOMGCTR
Silver	SiWAV1, SiWAV2	BCOMSI	BCOMITR
Sugar	SbWAV1, SbWAV2	BCOMSB	BCOMBTR
Cotton	CtWAV1, CtWAV2	BCOMCT	BCOMCTTR
Coffee	KcWAV1, KcWAV2	BCOMKC	BCOMKCTR
Cocoa	CcWAV1, CcWAV2	BCOMCC	BCOMCCTR
Soybean Meal	SmWAV1, SmWAV2	BCOMSM	BCOMSMT
Soybean Oil	BoWAV1, BoWAV2	BCOMBO	BCOMBOTR
Lead	PbWAV1, PbWAV2	BCOMPb	BCOMPbTR
Platinum	PlWAV1, PlWAV2	BCOMPL	BCOMPLTR
Tin	SnWAV1, SnWAV2	BCOMSN	BCOMNTR
Gas Oil	GoWAV1, GoWAV2	BCOMGO	BCOMGOT
Orange Juice	OjWAV1, OjWAV2	BCOMOJ	BCOMOJTR
Feeder Cattle	FcWAV1, FcWAV2	BCOMFC	BCOMFCTR





Spot Subindex Name	Spot Subindex Ticker
BCOM Energy Spot Subindex	BCOMXESP
BCOM Petroleum Spot Subindex	BCOMPESP
BCOM Livestock Spot Subindex	BCOMLISP
BCOM Grains Spot Subindex	BCOMGRSP
BCOM Industrial Metals Spot Subindex	BCOMINSP
BCOM Precious Metals Spot Subindex	BCOMPRSP
BCOM Softs Spot Subindex	BCOMOSP
BCOM ExEnergy Spot Subindex	BCOMXESP
BCOM Agriculture Spot Subindex	BCOMAGSP

Please note that while the specifications for the HO contract were changed by the CME group in 2013 from heating oil to ultra-low sulfur diesel, the index names including “Heating Oil” will be retained in their original form, and future indices using the HO contract will be specified as “Heating Oil” indices.

Appendix I Calculation of Non-U.S.-Dollar-Denominated BCOM and BCOMTR

Bloomberg calculates (i) several non-US Dollar denominated (or currency converted) versions of BCOM and BCOMTR, (ii) several non-US Dollar currency daily hedged versions of BCOM and BCOMTR and (iii) several non-US Dollar currency monthly hedged versions of BCOM and BCOMTR.

The currency converted versions of the Indices reflect the performance that an investor who measures his investments in the foreign currency would receive by making a US Dollar denominated investment in the Indices. For example, consider a EUR-based investor who starts with 100 EUR to invest, converts the EUR into USD at the prevailing spot rate and invests the proceeds in an investment that tracks BCOMTR. At the end of the investment period, the investor sells the investment and converts the USD proceeds back into EUR at the prevailing spot rate. If, during the investment period, BCOM has increased by 5%, but the USD has weakened by 2% against the EUR, the investor would expect to have received an investment return of approximately 3% in EUR terms. The Bloomberg Commodity Index Euro Total Return could be expected to have increased by approximately 3% over the same investment period.

BCOM currency hedged versions aim to measure the performance of the Bloomberg Commodity Index (calculated in US Dollars), where currency exposures affecting index principal are hedged against the currencies indicated by the index names. Two variations of currency hedged versions are provided: monthly hedged and daily hedged. The different variations may be appropriate for different uses, depending on the nature of the needed benchmark or index-linked product.

#### I. Names and Acronyms for Non-US Dollar Denominated Indices

Currency Converted Index Name	Currency Converted Index Ticker
Bloomberg Commodity Index Euro	BCOMEU
Bloomberg Commodity Index Euro Total Return	BCOMEUR
Bloomberg Commodity Index Yen	BCOMJY
Bloomberg Commodity Index Yen Total Return	BCOMJYTR
Bloomberg Commodity Index Pound Sterling	BCOMGB
Bloomberg Commodity Index Pound Sterling Total Return	BCOMGBT
Bloomberg Commodity Index Swiss Franc	BCOMCH
Bloomberg Commodity Index Swiss Franc Total Return	BCOMCHT
Bloomberg Commodity Index Australian Dollar	BCOMAU
Bloomberg Commodity Index Australian Dollar Total Return	BCOMAUTR

Monthly Currency Hedged Index Name	Currency Hedged Index Ticker
Bloomberg Commodity Index Euro Hedged	BCOMHE
Bloomberg Commodity Index Euro Hedged Total Return	BCOMHET
Bloomberg Commodity Index Yen Hedged	BCOMHY
Bloomberg Commodity Index Yen Hedged Total Return	BCOMHYT
Bloomberg Commodity Index Pound Sterling Hedged	BCOMHP
Bloomberg Commodity Index Pound Sterling Hedged Total Return	BCOMHPT
Bloomberg Commodity Index Swiss Franc Hedged	BCOMHF
Bloomberg Commodity Index Swiss Franc Hedged Total Return	BCOMHFT



Daily Currency Hedged Index Name	Currency Hedged Index Ticker
Bloomberg Commodity Index Australian Dollar Hedged Daily	BCOMDA
Bloomberg Commodity Index Australian Dollar Hedged Daily Total Return	BCOMDAT
Bloomberg Commodity Index Canadian Dollar Hedged Daily	BCOMDC
Bloomberg Commodity Index Canadian Dollar Hedged Daily Total Return	BCOMDCT
Bloomberg Commodity Index Swiss Franc Hedged Daily	BCOMDF
Bloomberg Commodity Index Swiss Franc Hedged Daily Total Return	BCOMDFT
Bloomberg Commodity Index Euro Hedged Daily	BCOMDE
Bloomberg Commodity Index Euro Hedged Daily Total Return	BCOMDET
Bloomberg Commodity Index Pound Sterling Hedged Daily	BCOMDP
Bloomberg Commodity Index Pound Sterling Hedged Daily Total Return	BCOMDPT
Bloomberg Commodity Index Yen Hedged Daily	BCOMDY
Bloomberg Commodity Index Yen Hedged Daily Total Return	BCOMDYT

## II. Calculation of Currency Converted Indices

The calculation of the currency converted versions of the Indices will be accomplished by multiplying BCOM and BCOMTR values by the FX Reference Rate, divided by a fixed FX Starting Rate.

The FX Reference Rates are sourced from BFIX using the daily 16:00 London fix rate.

The calculation of the Daily Settlement values for the non-USD currency converted Indices will be as follows:

BCOM FX = the applicable currency converted version of BCOM Excess Return

BCOM FXTR = the applicable currency converted version of BCOM Total Return

FXRR = The applicable FX Reference Rate, expressed as FX units per US Dollar, rounded to 8 decimal places

FX Reference Rate Fallback: In the event that the FXRR is not available from the Bloomberg FX Fixings (BFIX), then Bloomberg will use expert judgment in determining the fx rates for the current business day.

$$BCOM\ FX = BCOM\ FX_{(t-1)} \times (BCOM / BCOM_{(t-1)}) \times (FXRR / FXRR_{(t-1)})$$

$$BCOM\ FXTR = BCOMTR\ FX_{(t-1)} \times (BCOMTR / BCOMTR_{(t-1)}) \times (FXRR / FXRR_{(t-1)})$$





Both the BCOM FX and the BCOM FXTR are rounded to 8 decimal places.

III. Calculation of Monthly Currency Hedged Indices

The three components used to calculate the hedged return of each currency hedged Index are as follows:

1. Performance of the unhedged Index in the hedge currency
2. Impact on return from the cost of the hedge
3. Return of the spot exchange rate

Impact on return due to the cost of the currency *i* hedge:

$$\left( 1 + \frac{FXRate_{i1}}{FFRate_{i1}} \right)$$

Where:

FXRate<sub>i1</sub> = Spot exchange rate of currency *i* at the close of the previous month

FFRate<sub>i1</sub> = One month forward rate of currency *i* at the close of the previous month

The return due to changes in the spot exchange rate of currency *i*:

$$\left( 1 + \frac{FXRate_{i1}}{FXRate_{i2}} \right)$$

Where:

FXRate<sub>i2</sub> = Spot exchange rate of currency *i* at the close of the current month

Combining the above two formulas, the total return of the hedge can be calculated as:

$$HI = \left( \frac{FXRate_{i1}}{FFRate_{i1}} - \frac{FXRate_{i1}}{FXRate_{i2}} \right)$$

Where

FXRate<sub>i1</sub> = Spot exchange rate of currency *i* at the close of the previous month

FXRate<sub>i2</sub> = Spot exchange rate of currency *i* at the close of the current month

FFRate<sub>i1</sub> = One month forward rate for currency *i* at the close of the previous month

The performance of the hedged index is the sum of the performance of the unhedged index and the hedge impact. The simplified formula is as follows:

$$\text{Performance of Hedged Index} = \left( \frac{UnhedgedIndex_2}{UnhedgedIndex_1} - 1 \right) + HI$$

Where

Unhedged Index<sub>1</sub> = Unhedged index at the close of the previous month in the hedge currency

Unhedged Index<sub>2</sub> = Unhedged index at the close of the current month in the hedge currency



To calculate the hedged index, the formula can be simplified as follows:

$$HedgedIndex_2 = HedgedIndex_1 \times \left( \frac{UnhedgedIndex_2}{UnhedgedIndex_1} + HI \right)$$

Where

Hedged Index<sub>1</sub> = Hedged index at the close of the previous month

Hedged Index<sub>2</sub> = Hedged index at the close of the current month

To calculate a daily currency hedged index, the value of the forward contract for the remaining period needs to be estimated. This can be expressed as follows:

$$FXRate_d + \left( \frac{D-d}{D} \right) \times (FFRate_d - FXRate_d)$$

Where

D = Total calendar days in the current month

d = Current day of the current month

FXRate<sub>d</sub> = Spot exchange rate as of the current day

FFRate<sub>d</sub> = Forward exchange rate as of the current day

Combining the above formula with the previously discussed formulas, the daily currency hedge index is calculated as follows:

$$HI_d = \left[ \frac{FXRate_{i0}}{FFRate_{i0}} - \frac{FXRate_{i0}}{FXRate_{id} + \left( \frac{D-d}{D} \right) * (FFRate_{id} - FXRate_{id})} \right]$$

$$HedgedIndex_d = HedgedIndex_0 \times \left( \frac{UnhedgedIndex_d}{UnhedgedIndex_0} + HI_d \right)$$

Where

D = Total calendar days in the current month

d = Current day of the current month

FXRate<sub>i0</sub> = Spot exchange rate of currency i at the close of the previous month

FXRate<sub>id</sub> = Spot exchange rate of currency i as of the current day

FFRate<sub>i0</sub> = One month forward rate for currency i at the close of the previous month

FFRate<sub>id</sub> = One month forward rate for currency i as of the current day

Hedged Index<sub>0</sub> = Hedged index at the close of the previous month

Hedged Index<sub>d</sub> = Hedged index at the current day

Unhedged Index<sub>0</sub> = Unhedge index at the close of the previous month in the hedge currency

Unhedged Index<sub>d</sub> = Unhedge index at the close of the current month in the hedge currency



IV. Calculation of Daily Currency Hedged Indices

The purpose of the Daily Currency Hedged Bloomberg Indices is to provide a benchmark for non-US investors with respect to investments in BCOM for which the effects of foreign exchange risk are hedged. The daily hedged indices may provide a more easily replicable (and thus more readily investable) hedging structure than a transaction (sometimes called a “quanto”) in which an investor receives the performance payable in one currency in respect of an index or asset that is denominated in another currency.

There are 3 versions of this index, an excess return, total return, and modified total return version. The excess return currency hedged index is calculated from the excess return USD version of the Index. The total return currency hedged version of the Index is calculated from the excess return currency hedged Index by adding the local interest of the currency which is hedged. Also available is a modified version of the total return currency hedged which is calculated from the excess return currency hedged Index by adding the US 3-Month T-Bill return adjusted by the 1-Week FX Carry return of the currency which is hedged. For all of these, the notional hedging position is rebalanced daily.

In the unlikely event that a market disruption or publication failure affects the FX rates used to calculate the Daily Hedged Currency Indices, then the Index Sponsors will determine the rates in a commercially reasonable manner, which could include averaging prices obtained from one or more foreign exchange dealers. As Index administrator, Bloomberg retains the flexibility to apply different methodologies or to make other changes to the calculations of the Daily Hedged Currency Indices in the event that a currency control mechanism is implemented or other material disruptions occur in the relevant foreign exchange markets.

The Applicable Reference Rates are defined based on the most recently published values, so a disruption to the publication of the values would normally result in the rates remaining unchanged during the disruption period. However, Bloomberg retains the flexibility to make changes to the Applicable Reference Rate or substitute alternate rates in the event of an extended or material disruption.

The daily currency hedged versions are available for the following currencies: AUD, CAD, CHF, EUR, JPY, and GBP.

Excess return index calculation

The general formula for calculating Daily Currency Hedged Excess Return Indices is:

$$I \quad HI_{ER,t} = HI_{ER,t-1} \times \left( 1 + \frac{FX_{t-1}^A}{FX_t^A} \times \left( \frac{I_{USD,ER,t}}{I_{USD,ER,t-1}} - 1 \right) \right)$$

Where:

- $HI_{ER,t}$  is the value of the Daily Currency Hedged Excess Return Index on index business day t.
- $FX_t$  FX Spot price as obtained from the source and time summarized in the table below.
- $I_{USD,ER,t}$  is the value of the USD Excess Return Index on Business Day t.
- A Quotation Exponent as defined in the table below:

Currency	A	FX Fixing Source	FX Fixing Time
EUR	1	Bloomberg BFIX	16:00 London
GBP	1	Bloomberg BFIX	16:00 London
CHF	-1	Bloomberg BFIX	16:00 London
AUD	1	Bloomberg BFIX	16:00 London
JPY	-1	Bloomberg BFIX	16:00 London



CAD	-1	Bloomberg BFIX	16:00 London
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Total return index calculations

The general formula for calculating Daily Currency Hedged Total Return Indices using local interest rates is:

$$HI_{TR,t} = HI_{TR,t-1} \times \left( \frac{HI_{ER,t}}{HI_{ER,t-1}} + IRR_t \right)$$

Where:

- HI<sub>TR,t</sub> is the value of the Daily Currency Hedged Total Return Index on Business Day **t**.
- HI<sub>ER,t</sub> is the value of the Daily Currency Hedged Excess Return Index on Business Day **t**.
- IRR<sub>t</sub> is the Interest Rate Return index business day **t**, generally defined as:

$$IRR_t = \left( 1 - \frac{N \times (ARR_t - Spread)}{D} \right)^{\frac{d_{t-1}-d_t}{N}} - 1$$

ARR<sub>t</sub> is the Applicable Reference Rate on Business Day **t** defined as the latest reference rate published as of a Business Day prior to such Business Day **t**.

N is the currency market convention Numerator as defined in the table below.

D is the currency market convention Denominator as defined in the table below.

d<sub>t-1</sub>-d<sub>t</sub> is the number of calendar days from index business day t-1 to index business day t

Spread is the Spread as defined in the table below:

Currency	N	D	Reference Rate	Spread <sup>28*</sup>
EUR	1	360	Effective Overnight Index Average - EONIA	0
GBP	1	365	SONIA O/N Deposit rate	0
CHF	1	360	Tom Next Offered Index Swaps	0
AUD	1	365	RBA Cash Overnight Rate	0
JPY	1	360	Japan Overnight Call Rate	0
CAD	1	365	Canadian Overnight Repo Rate Average - CORRA	0
USD	91	360	91-Day US Treasury Bill Rate	0

Market data codes are summarized in the table below:

Reference Rate	Bloomberg Code
Effective Overnight Index Average - EONIA	EONIA Index
SONIA O/N Deposit rate	SONIO/N Index
Tom Next Offered Index Swaps	TOISTOIS Index
RBA Cash Overnight Rate	RBACOR Index
Japan Overnight Call Rate	MUTKCALM Index

<sup>28</sup> The Spreads applicable to each ARR have initially been set to zero, though they may periodically be adjusted where the BOC determines that there have been material changes to the funding cost or rate differential applicable to a hypothetical investment grade issuer of Index-linked products and that changes are therefore warranted to maintain the applicable Index as a benchmark for a currency hedged investment in commodities.

The general formula for calculating Daily Currency Hedged Modified Total Return Indices is:

$$HI_{TR,t} = HI_{TR,t-1} \times \left( \frac{HI_{ER,t}}{HI_{ER,t-1}} + IRR_t \right)$$

Where:

- HI<sub>TR,t</sub> is the value of the Daily Currency Hedged Total Return Index on Business Day **t**.
- HI<sub>ER,t</sub> is the value of the Daily Currency Hedged Excess Return Index on Business Day **t**.
- IRR<sub>t</sub> is the Interest Rate Return index business day **t**, generally defined as:

$$IRR_t = \left( 1 - \frac{91 * 3MR_{t-1}}{360} \right)^{\frac{d_{t-1} - d_t}{91}} * \left( \frac{FX_t^A}{1WF_t^A} \right)^{\frac{d_{t-1} - d_t}{7}} - 1$$

3MR<sub>t</sub> = the most recent weekly auction High Rate for 13 week (3 Month) U.S. Treasury Bills, as reported on the website <http://www.treasurydirect.gov/instit/annceresult/annceresult.htm> published by the Bureau of the Public Debt of the U.S. Treasury, or any successor page, on such Business Day, provided, that if such auction High Rate is published on such Business Day d, TBill(d-1) shall be the rate published for the most recent previous auction.

This rate is then used for every day until the next rate is released; provided, however, that if a new rate is scheduled to be released on a given day, the prior rate is used for purposes of calculations in respect of such release date. The new rate is generally obtained on Monday and, accordingly, is first used in respect of Tuesday's settlement calculations. In the event of a holiday or other disruption in the Treasury auction schedule, the last available rate is used until the next rate becomes available. Note that the prior day's rate is used in calculating the value of TBD, to reflect the realization of an investment at that rate on day "t".

- FX<sub>t</sub> = Spot Exchange Rate on Business Day **t**.
- 1WF<sub>t</sub> = 1-Week Forward Rate on Business Day **t** as obtained from the source and time summarized in the table below.
- A = Quotation Exponent as defined in the table below.

Currency	A	1 Week Forward FX Fixing Source	1 Week Forward FX Fixing Time
EUR	-1	Bloomberg BFIX	16:00 London
GBP	-1	Bloomberg BFIX	16:00 London
CHF	1	Bloomberg BFIX	16:00 London
AUD	-1	Bloomberg BFIX	16:00 London
JPY	1	Bloomberg BFIX	16:00 London
CAD	1	Bloomberg BFIX	16:00 London


**Appendix J Calculation of the Forward Month BCOM**

Bloomberg calculates, or may in the future calculate, forward month versions of BCOM and certain Subindices.<sup>29</sup>

These indices are calculated on an excess return and total return basis. Following are the names of the forward month Indices:

Bloomberg Commodity Index 1 Month Forward	(BCOMF1)
Bloomberg Commodity Index 2 Month Forward	(BCOMF2)
Bloomberg Commodity Index 3 Month Forward	(BCOMF3)
Bloomberg Commodity Index 4 Month Forward	(BCOMF4)
Bloomberg Commodity Index 5 Month Forward	(BCOMF5)
Bloomberg Commodity Index 6 Month Forward	(BCOMF6)
Bloomberg Commodity Index Total Return 1 Month Forward	(BCOMF1T)
Bloomberg Commodity Index Total Return 2 Month Forward	(BCOMF2T)
Bloomberg Commodity Index Total Return 3 Month Forward	(BCOMF3T)
Bloomberg Commodity Index Total Return 4 Month Forward	(BCOMF4T)
Bloomberg Commodity Index Total Return 5 Month Forward	(BCOMF5T)
Bloomberg Commodity Index Total Return 6 Month Forward	(BCOMF6T)

These indices follow all the rules of BCOM as contained in this Methodology with the following modification: the contracts defined as Lead Future and Next Future, as designated in Table 9, are advanced, such that

- For BCOMF1, the contracts that would be the Lead Future and Next Future in the next calendar month are instead the Lead Future and Next Future in the current calendar month.
- For BCOMF2, the contracts that would be the Lead Future and Next Future in two calendar months are instead the Lead Future and Next Future in the current calendar month.
- For BCOMF3, the contracts that would be the Lead Future and Next Future in three calendar months are instead the Lead Future and Next Future in the current calendar month.
- For the other forward month Indices, a similar pattern is followed, except that, for liquidity reasons, Live Cattle, Lean Hogs and Unleaded Gasoline will never follow a schedule advanced by more than 5 months. So, for example, in BCOMF6, (i) for each Index Commodity (other than Live Cattle, Lean Hogs and Unleaded Gasoline), the contracts that would be the Lead Future and the Next Future in six calendar months are instead the Lead Future and the Next Future in the current calendar month and (ii) for Live Cattle, Lean Hogs and Unleaded Gasoline, the contracts that would be the Lead Future and the Next Future in five calendar months are instead the Lead Future and the Next Future in the current calendar month.

The Commodity Index Multipliers used in the calculation of the forward month versions of BCOM are unchanged from that used for the calculation of the standard BCOM.

Bloomberg calculates Subindex versions of BCOMF2, BCOMF3 and BCOMF6. The calculation methodology for the Subindex versions of these indices is the same as for the Subindex versions of BCOM, but references

<sup>29</sup> As of the date of this Methodology, forward indices beyond 6-months have not been launched but may be in the future.

only the futures contracts relevant to the applicable Subindex. These Subindices are calculated on an excess return and total return basis. A list of Indices and Subindices is available at the following URL:

<http://www.bloombergindices.com>

**Table 24: Roll schedule for the Lead Future for Natural Gas**

Calendar Month	Lead Future			
	BCOM	BCOMF1	BCOMF2	BCOMF3
Jan	Mar	Mar	May	May
Feb	Mar	May	May	Jul
Mar	May	May	Jul	Jul
Apr	May	Jul	Jul	Sep
May	Jul	Jul	Sep	Sep
Jun	Jul	Sep	Sep	Nov
Jul	Sep	Sep	Nov	Nov
Aug	Sep	Nov	Nov	Jan
Sep	Nov	Nov	Jan	Jan
Oct	Nov	Jan	Jan	Mar
Nov	Jan	Jan	Mar	Mar
Dec	Jan	Mar	Mar	May



For additional clarity, refer to the following Tables 25, 26 and 27 (Contract Months Included in WAV Calculations) modified for the first three forward Indices:

**Table 25 – Table 9 as modified for BCOMF1**

Commodity	Jan (F)	Feb (G)	Mar (H)	Apr (J)	May (K)	Jun (M)	Jul (N)	Aug (Q)	Sep (U)	Oct (V)	Nov (X)	Dec (Z)
Natural Gas	Mar	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar
WTI Crude Oil	Mar	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar
Brent Crude Oil	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
Unleaded Gas	Mar	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar
ULS Diesel	Mar	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar
Live Cattle	Apr	Apr	Jun	Jun	Aug	Aug	Oct	Oct	Dec	Dec	Feb	Feb
Lean Hogs	Apr	Apr	Jun	Jun	Jul	Aug	Oct	Oct	Dec	Dec	Feb	Feb
Wheat (Chicago)	Mar	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar
Wheat (KC HRW)	Mar	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar
Corn	Mar	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar
Soybeans	Mar	May	May	Jul	Jul	Nov	Nov	Nov	Nov	Jan	Jan	Mar
Soybean Oil	Mar	May	May	Jul	Jul	Dec	Dec	Dec	Dec	Jan	Jan	Mar
Soybean Meal	Mar	May	May	Jul	Jul	Dec	Dec	Dec	Dec	Jan	Jan	Mar
Aluminum	Mar	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar
Copper	Mar	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar
Zinc	Mar	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar
Nickel	Mar	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar
Lead	Mar	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar
Tin	Mar	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar
Gold	Apr	Apr	Jun	Jun	Aug	Aug	Dec	Dec	Dec	Dec	Feb	Feb
Silver	Mar	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar
Platinum	Apr	Apr	Jul	Jul	Jul	Oct	Oct	Oct	Jan	Jan	Jan	Apr
Sugar	Mar	May	May	Jul	Jul	Oct	Oct	Oct	Mar	Mar	Mar	Mar
Cotton	Mar	May	May	Jul	Jul	Dec	Dec	Dec	Dec	Dec	Mar	Mar
Coffee	Mar	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar
Cocoa	Mar	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar



Table 26 – Table 9 as modified for BCOMF2

Commodity	Jan (F)	Feb (G)	Mar (H)	Apr (J)	May (K)	Jun (M)	Jul (N)	Aug (Q)	Sep (U)	Oct (V)	Nov (X)	Dec (Z)
Natural Gas	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
WTI Crude Oil	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
Brent Crude Oil	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
Unleaded Gas	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
ULS Diesel	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
Live Cattle	Apr	Jun	Jun	Aug	Aug	Oct	Oct	Dec	Dec	Feb	Feb	Apr
Lean Hogs	Apr	Jun	Jun	Jul	Aug	Oct	Oct	Dec	Dec	Feb	Feb	Apr
Wheat (Chicago)	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar
Wheat (KC HRW)	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar
Corn	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar
Soybeans	May	May	Jul	Jul	Nov	Nov	Nov	Nov	Jan	Jan	Mar	Mar
Soybean Oil	May	May	Jul	Jul	Dec	Dec	Dec	Dec	Jan	Jan	Mar	Mar
Soybean Meal	May	May	Jul	Jul	Dec	Dec	Dec	Dec	Jan	Jan	Mar	Mar
Aluminum	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
Copper	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar
Zinc	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
Nickel	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
Lead	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
Tin	May	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar
Gold	Apr	Jun	Jun	Aug	Aug	Dec	Dec	Dec	Dec	Feb	Feb	Apr
Silver	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar
Platinum	Apr	Jul	Jul	Jul	Oct	Oct	Oct	Jan	Jan	Jan	Apr	Apr
Sugar	May	May	Jul	Jul	Oct	Oct	Oct	Mar	Mar	Mar	Mar	Mar
Cotton	May	May	Jul	Jul	Dec	Dec	Dec	Dec	Dec	Mar	Mar	Mar
Coffee	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar
Cocoa	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar





Table 27 – Table 9 as modified for BCOMF3

Commodity	Jan (F)	Feb (G)	Mar (H)	Apr (J)	May (K)	Jun (M)	Jul (N)	Aug (Q)	Sep (U)	Oct (V)	Nov (X)	Dec (Z)
Natural Gas	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
WTI Crude Oil	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
Brent Crude Oil	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May	May
Unleaded Gas	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
ULS Diesel	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
Live Cattle	Jun	Jun	Aug	Aug	Oct	Oct	Dec	Dec	Feb	Feb	Apr	Apr
Lean Hogs	Jun	Jun	Jul	Aug	Oct	Oct	Dec	Dec	Feb	Feb	Apr	Apr
Wheat (Chicago)	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar	May
Wheat (KC HRW)	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar	May
Corn	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar	May
Soybeans	May	Jul	Jul	Nov	Nov	Nov	Nov	Jan	Jan	Mar	Mar	May
Soybean Oil	May	Jul	Jul	Dec	Dec	Dec	Dec	Jan	Jan	Mar	Mar	May
Soybean Meal	May	Jul	Jul	Dec	Dec	Dec	Dec	Jan	Jan	Mar	Mar	May
Aluminum	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
Copper	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar	May
Zinc	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
Nickel	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
Lead	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
Tin	May	Jul	Jul	Sep	Sep	Nov	Nov	Jan	Jan	Mar	Mar	May
Gold	Jun	Jun	Aug	Aug	Dec	Dec	Dec	Dec	Feb	Feb	Apr	Apr
Silver	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar	May
Platinum	Jul	Jul	Jul	Oct	Oct	Oct	Jan	Jan	Jan	Apr	Apr	Apr
Sugar	May	Jul	Jul	Oct	Oct	Oct	Mar	Mar	Mar	Mar	Mar	May
Cotton	May	Jul	Jul	Dec	Dec	Dec	Dec	Dec	Mar	Mar	Mar	May
Coffee	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar	May
Cocoa	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar	May





**Appendix L Calculation of the Bloomberg Roll Select Commodity Index**

The Bloomberg Roll Select Commodity Index is a version of the Bloomberg Commodity Index that aims to mitigate the effects of contango market structure on index performance. For each commodity, the index rolls into the futures contract showing the most backwardation or least amount of contango, selecting from those eligible contracts with 9 months or fewer until expiration.

On the fourth business day of each month (each a “contract selection date”) the contract selection process is performed as follows:

- Using Table 9 of the Methodology, for each index commodity “j” represented in the index in the current year, the expiration date of each futures contract listed on Table 9 is determined for such index commodity beginning with the next future and with 9 months or fewer until expiration as of the contract selection date (using a period of 273 calendar days) (a “potential contract”) as well as the expiration date of the futures contract immediately preceding each such contract as specified in Table 28 below (a “prior period contract”), which may be a contract not included in Table 9, it being understood, however, that no contract shall be selected if there is no prior period contract.

The potential contract with the latest expiration date for the index commodity j is termed the “maximum potential contract j” or “MPC j.”

**Table 28 Prior Period Contracts**

Commodity	Jan (F)	Feb (G)	Mar (H)	Apr (J)	May (K)	Jun (M)	Jul (N)	Aug (Q)	Sep (U)	Oct (V)	Nov (X)	Dec (Z)
Natural Gas	Dec		Feb		Apr		Jun		Aug		Oct	
WTI Crude Oil	Dec		Feb		Apr		Jun		Aug		Oct	
Brent Crude Oil	Dec		Feb		Apr		Jun		Aug		Oct	
Unleaded Gas	Dec		Feb		Apr		Jun		Aug		Oct	
ULS Diesel	Dec		Feb		Apr		Jun		Aug		Oct	
Live Cattle		Dec		Feb		Apr		Jun		Aug		Oct
Lean Hogs		Dec		Feb		Apr	Jun	Jul		Aug		Oct
Wheat (Chicago)			Dec		Mar		May		Jul			Sep
Wheat (KC HRW)			Dec		Mar		May		Jul			Sep
Corn			Dec		Mar		May		Jul			Sep
Soybeans	Nov		Jan		Mar		May				Jul	
Soybean Oil	Dec		Jan		Mar		May					Jul
Soybean Meal	Dec		Jan		Mar		May					Jul
Aluminum	Dec		Feb		Apr		Jun		Aug		Oct	
Copper			Feb		Apr		Jun		Aug			Nov
Zinc	Dec		Feb		Apr		Jun		Aug		Oct	
Nickel	Dec		Feb		Apr		Jun		Aug		Oct	
Gold		Dec		Feb		Apr		Jun				Oct
Silver			Dec		Mar		May		Jul			Sep
Sugar			Oct		Mar		May			Jul		
Cotton			Dec		Mar		May					Jul
Coffee			Dec		Mar		May		Jul			Sep

Note: Prior Period Contracts are shown under headings representing Potential Contracts

- The annualized percentage spread is calculated between each potential contract and the prior period contract for all index commodities “j” (using all potential contracts listed in Table 9 out to MPC<sub>j</sub>):

$N_j$  = the number of listed contracts for Index Commodity  $j$  out to and including the MPC<sub>j</sub>.



$C_{i,j}$  = the “ith” numbered contract for Index Commodity  $j$ . The highest value of “i” is  $N_j$ .

$P_{i,j}$  = the Settlement Price on the CSD for  $C_{i,j}$ .

$S_{i,j}$  = the curve spread between  $C_{i-1,j}$  and  $C_{i,j}$  as calculated below:

Days  $_i$  = Calendar days from expiration date of  $C_{i-1,j}$  to expiration date of  $C_{i,j}$

For each “i” for which  $C_{i,j}$  is a Potential Contract,  $S_{i,j} = ((P_{i-1,j} / P_{i,j}) - 1) \times [365 / \text{Days}_i]$

- For each index commodity  $j$ , the contract to be defined as the “next” contract to be rolled into and used in the calculation of the Bloomberg Roll Select Commodity Index (i.e., the contract which will be used to determine the relevant index commodity  $j$ ’s component of WAV2 during the current calendar month and WAV1 during the following calendar month), is the potential contract which corresponds to the highest value of  $S_{i,j}$ . In the event that two values of  $S_{i,j}$  for index commodity  $j$  are equal, the “next” contract will be the potential contract of shorter maturity.

The Bloomberg Roll Select Indices, together with their Bloomberg tickers, are set out below.

Index Name	Bloomberg Ticker	Pre-7/1/14 Ticker
Bloomberg Roll Select Commodity Index	BCOMRS	DJUBSRS
Bloomberg Roll Select Commodity Total Return Index	BCOMRST	DJUBSRST
Bloomberg Roll Select Agriculture Subindex	BCOMRAG	DJUBRAG
Bloomberg Roll Select Agriculture Subindex Total Return	BCOMRAGT	DJUBRAGT
Bloomberg Roll Select Energy Subindex	BCOMREN	DJUBREN
Bloomberg Roll Select Energy Subindex Total Return	BCOMRENT	DJUBRENT
Bloomberg Roll Select Grains Subindex	BCOMRGR	DJUBRGR
Bloomberg Roll Select Grains Subindex Total Return	BCOMRGRT	DJUBRGRT
Bloomberg Roll Select Industrial Metals Subindex	BCOMRIN	DJUBRIN
Bloomberg Roll Select Industrial Metals Subindex Total Return	BCOMRINT	DJUBRINT
Bloomberg Roll Select Livestock Subindex	BCOMRLI	DJUBRLI
Bloomberg Roll Select Livestock Subindex Total Return	BCOMRLIT	DJUBRLIT
Bloomberg Roll Select Petroleum Subindex	BCOMRPE	DJUBRPE
Bloomberg Roll Select Petroleum Subindex Total Return	BCOMRPET	DJUBRPET
Bloomberg Roll Select Precious Metals Subindex	BCOMRPR	DJUBRPR
Bloomberg Roll Select Precious Metals Subindex Total Return	BCOMRPRT	DJUBRPRT
Bloomberg Roll Select Softs Subindex	BCOMRSO	DJUBRSO
Bloomberg Roll Select Softs Subindex Total Return	BCOMRSOT	DJUBRSOT
Bloomberg Roll Select ExEnergy Subindex	BCOMRXE	DJUBRXE
Bloomberg Roll Select ExEnergy Subindex Total Return	BCOMRXET	DJUBRXET
Bloomberg Roll Select Aluminum Subindex	BCOMRAL	DJUBRAL
Bloomberg Roll Select Aluminum Subindex Total Return	BCOMRALT	DJUBRALT
Bloomberg Roll Select Coffee Subindex	BCOMRKC	DJUBRKC
Bloomberg Roll Select Coffee Subindex Total Return	BCOMRKCT	DJUBRKCT
Bloomberg Roll Select Copper Subindex	BCOMRHG	DJUBRHG
Bloomberg Roll Select Copper Subindex Total Return	BCOMRHGT	DJUBRHGT
Bloomberg Roll Select Corn Subindex	BCOMRCN	DJUBRCN
Bloomberg Roll Select Corn Subindex Total Return	BCOMRCNT	DJUBRCNT
Bloomberg Roll Select Cotton Subindex	BCOMRCT	DJUBRCT

Bloomberg Roll Select Cotton Subindex Total Return	BCOMRCTT	DJUBRCTT
Bloomberg Roll Select Gold Subindex	BCOMRGC	DJUBRGC
Bloomberg Roll Select Gold Subindex Total Return	BCOMRGCT	DJUBRGCT
Bloomberg Roll Select ULS Diesel (HO) Subindex	BCOMRHO	DJUBRHO
Bloomberg Roll Select ULS Diesel (HO) Subindex Total Return	BCOMRHOT	DJUBRHOT
Bloomberg Roll Select Lean Hogs Subindex	BCOMRLH	DJUBRLH
Bloomberg Roll Select Lean Hogs Subindex Total Return	BCOMRLHT	DJUBRLHT
Bloomberg Roll Select Live Cattle Subindex	BCOMRLC	DJUBRLC
Bloomberg Roll Select Live Cattle Subindex Total Return	BCOMRLCT	DJUBRLCT
Bloomberg Roll Select Natural Gas Subindex	BCOMRNG	DJUBRNG
Bloomberg Roll Select Natural Gas Subindex Total Return	BCOMRNGT	DJUBRNGT
Bloomberg Roll Select Nickel Subindex	BCOMRNI	DJUBRNI
Bloomberg Roll Select Nickel Subindex Total Return	BCOMRNIT	DJUBRNIT
Bloomberg Roll Select Silver Subindex	BCOMRSI	DJUBRSI
Bloomberg Roll Select Silver Subindex Total Return	BCOMRSIT	DJUBRSIT
Bloomberg Roll Select Soybeans Subindex	BCOMRSY	DJUBRSY
Bloomberg Roll Select Soybeans Subindex Total Return	BCOMRSYT	DJUBRSYT
Bloomberg Roll Select Soybean Meal Subindex	BCOMRSM	DJUBRSM
Bloomberg Roll Select Soybean Meal Subindex Total Return	BCOMRSMT	DJUBRSMT
Bloomberg Roll Select Soybean Oil Subindex	BCOMRBO	DJUBRBO
Bloomberg Roll Select Soybean Oil Subindex Total Return	BCOMRBOT	DJUBRBOT
Bloomberg Roll Select Sugar Subindex	BCOMRSB	DJUBRSB
Bloomberg Roll Select Sugar Subindex Total Return	BCOMRSBT	DJUBRSBT
Bloomberg Roll Select Unleaded Gasoline Subindex	BCOMRRB	DJUBRRB
Bloomberg Roll Select Unleaded Gasoline Subindex Total Return	BCOMRRBT	DJUBRRBT
Bloomberg Roll Select Wheat Subindex	BCOMRWH	DJUBRWH
Bloomberg Roll Select Wheat Subindex Total Return	BCOMRWHT	DJUBRWHT
Bloomberg Roll Select Kansas Wheat Subindex	BCOMRKW	DJUBRKW
Bloomberg Roll Select Kansas Wheat Subindex Total Return	BCOMRKWT	DJUBRKWT
Bloomberg Roll Select WTI Crude Oil Subindex	BCOMRCL	DJUBRCL
Bloomberg Roll Select WTI Crude Oil Subindex Total Return	BCOMRCLT	DJUBRCLT
Bloomberg Roll Select Zinc Subindex	BCOMRZS	DJUBRZS
Bloomberg Roll Select Zinc Subindex Total Return	BCOMRZST	DJUBRZST
Bloomberg Roll Select Commodity ex-Agriculture and Livestock Subindex	BBURXAL	DJURXAL
Bloomberg Roll Select Commodity ex-Agriculture and Livestock Subindex Total Return	BBURXALT	DJURXALT
Bloomberg Roll Select Brent Crude Oil Subindex	BCOMRCO	DJUBRCO
Bloomberg Roll Select Brent Crude Oil Subindex Total Return	BCOMRCOT	DJUBRCOT


 Appendix M Calculation of the Bloomberg Commodity Index 2-4-6 Forward Blend<sup>SM</sup>

Bloomberg Commodity Index 2–4–6 Forward Blend<sup>SM</sup> (“2–4–6 Blend”) is an equally weighted basket of positions in the Bloomberg Commodity Index 2 Month Forward<sup>SM</sup> (“F2”), Bloomberg Commodity Index 4 Month Forward<sup>SM</sup> (“F4”) and Bloomberg Commodity Index 6 Month Forward<sup>SM</sup> (“F6”).

Exposure to each component index is rebalanced monthly on the Rebalancing Day *i*, which is the last BCOM business day of every month.

The level of the Bloomberg Commodity Index 2–4–6 Forward Blend is determined by reference to (i) the performance of the Bloomberg Commodity Index 2 Month Forward<sup>SM</sup>, (ii) the performance of the Bloomberg Commodity Index 4 Month Forward<sup>SM</sup> and (iii) the performance of the Bloomberg Commodity Index 6 Month Forward<sup>SM</sup>.

On any BCOM Business Day *t*:

$$2-4-6Blend_t = 2-4-6Blend_i \times \left( 1 + \left( \frac{1}{3} \times \left( \frac{F2_t}{F2_i} - 1 \right) + \frac{1}{3} \times \left( \frac{F4_t}{F4_i} - 1 \right) + \frac{1}{3} \times \left( \frac{F6_t}{F6_i} - 1 \right) \right) \right)$$

Where:

2–4–6Blend<sub>*i*</sub> is the closing level on the most recent Rebalancing Day *i* prior to BCOM Business Day *t*.

F2<sub>*t*</sub> is the closing level in USD of the Bloomberg Commodity Index 2 Month Forward<sup>SM</sup> on BCOM Business Day *t*.

F2<sub>*i*</sub> is the closing level in USD of the Bloomberg Commodity Index 2 Month Forward<sup>SM</sup> on the most recent Rebalancing Day *i* prior to BCOM Business Day *t*.

F4<sub>*t*</sub> is the closing level in USD of the Bloomberg Commodity Index 4 Month Forward<sup>SM</sup> on BCOM Business Day *t*.

F4<sub>*i*</sub> is the closing level in USD of the Bloomberg Commodity Index 4 Month Forward<sup>SM</sup> on the most recent Rebalancing Day *i* prior to BCOM Business Day *t*.

F6<sub>*t*</sub> is the closing level in USD of the Bloomberg Commodity Index 6 Month Forward<sup>SM</sup> on BCOM Business Day *t*.

F6<sub>*i*</sub> is the closing level in USD of the Bloomberg Commodity Index 6 Month Forward<sup>SM</sup> on the most recent Rebalancing Day *i* prior to BCOM Business Day *t*.

Input prices for the F2, F4 and F6 are rounded to eight decimals.

Bloomberg Commodity Index 2–4–6 Forward Blend Total Return<sup>SM</sup> is calculated according to the following formula:

On any BCOM Business Day t:

$$2-4-6BlendTR_t = 2-4-6BlendTR_i \times \left( 1 + \left( \frac{2-4-6Blend_t}{2-4-6Blend_i} - 1 \right) + a_t \right)$$

$$a_t = \prod_{j=i+1}^t TBD_j - 1$$

$$TBD_j = \frac{1}{\left( 1 - 3MR_{j-1} \times \left( \frac{91}{360} \right) \right)^{\frac{DAYS}{91}}}$$

Where:

2-4-6 BlendTR<sub>i</sub> is the closing level on the most recent Rebalancing Day i prior to BCOM Business Day t.

3MR is the most recent weekly auction High Rate for 13 week (3 Month) U.S. Treasury Bills, as reported on the website <http://www.treasurydirect.gov/instit/annceresult/annceresult.htm> published by the Bureau of the Public Debt of the U.S. Treasury, or any successor page, on such Business Day d, provided, that if such auction High Rate is published on such Business Day d, TBill(d-1) shall be the rate published for the most recent previous auction.

TBD = Treasury Bill Daily Return.

DAYS = Number of calendar days from and including the prior Calculation Date to but excluding the current Calculation Date.

Calculation Date = date for which calculation is made.











### Commodities available for inclusion in the Bloomberg Commodity Capped Index:

Symbol	Commodity	Group	Component
CL	WTI Crude Oil	Energy	Petroleum
HO	ULS Diesel	Energy	Petroleum
CO	Brent Crude Oil	Energy	Petroleum
XB	RBOB Gasoline	Energy	Petroleum
W	Chicago Wheat	Agriculture	Wheat
KW	KC HRW Wheat	Agriculture	Wheat
BO	Soybean Oil	Agriculture	Soybean Complex
SM	Soybean Meal	Agriculture	Soybean Complex
S	Soybeans	Agriculture	Soybean Complex
C	Corn	Agriculture	Corn
CT	Cotton	Agriculture	Cotton
SB	Sugar	Agriculture	Sugar
KC	Coffee	Agriculture	Coffee
LC	Live Cattle	Livestock	Live Cattle
LH	Lean Hogs	Livestock	Lean Hogs
NG	Natural Gas	Energy	Natural Gas
HG	Copper	Industrial Metals	Copper
LA	Aluminum	Industrial Metals	Aluminum
LN	Nickel	Industrial Metals	Nickel
LX	Zinc	Industrial Metals	Zinc
SI	Silver	Precious Metals	Silver
GC	Gold	Precious Metals	Gold

### Calculation of the Bloomberg ex-Agriculture and Livestock Capped Index

The Bloomberg Commodity ex- Agriculture and Livestock Capped Index is a version of the Bloomberg Commodity Index (BCOM) which aims to cap the weight of the larger components within the index based on the rules described above. Historically, and currently, the largest component has been Petroleum. The capping is done on the fourth business day of each month.

The composition of the index is derived from BCOM excluding the commodities that make up the Bloomberg Agriculture and Bloomberg Livestock Indices. The index is rebalanced each year pursuant to any changes to BCOM and commodities are added or excluded accordingly.

Prior to the launch Bloomberg ex-Agriculture and Livestock Capped Index in July of 2013, the CIMs were calculated on the last business day of each month.

**Commodities available for inclusion in the Bloomberg Commodity ex-Agriculture and Livestock Capped Index:**

Symbol	Commodity	Group	Component
CL	WTI Crude Oil	Energy	Petroleum
HO	ULS Diesel	Energy	Petroleum
CO	Brent Crude Oil	Energy	Petroleum
XB	RBOB Gasoline	Energy	Petroleum
NG	Natural Gas	Energy	Natural Gas
HG	Copper	Industrial Metals	Copper
LA	Aluminum	Industrial Metals	Aluminum
LN	Nickel	Industrial Metals	Nickel
LX	Zinc	Industrial Metals	Zinc
SI	Silver	Precious Metals	Silver
GC	Gold	Precious Metals	Gold

Index names and codes are as follows:

Index Name	New Bloomberg Ticker	Pre-7/1/14 Ticker
Bloomberg Commodity ex-Agriculture and Livestock Capped Index	BBUXALC	DJUXALC
Bloomberg Commodity ex-Agriculture and Livestock Capped Total Return Index	BBUXALCT	DJUXALCT

Appendix P Calculation of the Bloomberg Single Commodity Capped Subindices

The Bloomberg Single Commodity Capped Subindices of the Bloomberg Commodity Index<sup>®</sup> intend to be compliant with ESMA/UCITS guidelines while maintaining the diversification of the Bloomberg Commodity Index component weights.

The methodology supplement for the Bloomberg Single Commodity Capped Subindices uses various terms and definitions from the Bloomberg Commodity Index Methodology. Where not specifically noted otherwise in this document, the rules of the Bloomberg Commodity Index Methodology prevail.

The namesake commodity is the commodity bearing the name of the Bloomberg Single Commodity Subindex Capped. For example, Gold is the namesake commodity for the Bloomberg Gold Subindex Capped. In general, any Bloomberg Single Commodity Subindex Capped consists of the namesake commodity as well as most of the rest of the Bloomberg Commodity Index commodities, subject to the Rule of Exclusion regarding commodities that belong to a given component.

The Rule of Exclusion states that when any commodity that belongs to a component is the namesake commodity of the index, all other commodities of that same component are excluded in that particular single commodity index. For instance, for the Bloomberg WTI Crude Oil Subindex Capped, the three remaining commodities (Brent Crude Oil, Ultra-low Sulfur Diesel and Unleaded Gasoline) of the Petroleum Component are not included in the index.

The weighting scheme of the Bloomberg Single Commodity Subindex Capped is as follows: in every Bloomberg Single Commodity Subindex Capped, each namesake commodity is allocated 35% at each rebalance, with the remaining 65% distributed among the eligible BCOM commodities according to the weights derived from the CIMs of BCOM, subject to the Rule of Exclusion. During the January rebalance the new CIMs are applied to calculate the weights for BCOM. In addition to the 35% cap on the namesake commodity, the weights of the remaining components are reviewed. If the weight of any remaining component exceeds 20%, its weight is reduced to 20% and any excess weight is distributed pro-rata across all commodities with a weight under 20%. This step is repeated until the weight of each remaining component does not exceed 20%. The effective weights are the weights for each commodity on the determination date with the exception of the January rebalance where the weights are based on the new Commodity Index Percentages.

The design of the Bloomberg Single Commodity Subindex Capped family intends to comply with the current ESMA/UCITS guidelines, as the weights are balanced on a quarterly basis. In essence, each single commodity subindex consists of a basket of individual Bloomberg Single Commodity Subindices, not just one single individual commodity.

- **Rebalancing Frequency:** Quarterly
- **Determination date:** Fourth business day of January, April, July and October.
- **Components:** There are 16 components, with three containing more than one commodity based on their similarity. The multiple commodity components are as follows:
  - **Petroleum:** WTI Crude Oil, Brent Crude Oil, Unleaded Gasoline and Ultra-low Sulfur Diesel
  - **Wheat:** Chicago and KC HRW Wheat
  - **Soybean:** Soybeans, Soybean Meal and Soybean Oil



Appendix Q Bloomberg Commodity Index Files

Table 29: Overview of changes in Bloomberg Commodity Index files

File Types	Description
_CIR	<b><u>Commodity Index Report</u></b> This file provides official 8 decimal place index levels and additional analytics
_CCR	<b><u>Commodity Components Report</u></b> This file provides information on the index constituents
_HDA	<b><u>Hedging Daily Analysis</u></b> Hedged index level files
_FDA	<b><u>FX Daily Analysis</u></b> BFIX FX rates and overnight rates used for daily and monthly hedging
_XDA	<b><u>Currency rates</u></b> BFIX FX rates used for daily and monthly hedging
Change_file	<b><u>Change Files</u></b> Constituent and index level information
_IDA	<b><u>Index Daily Analysis</u></b> Bloomberg Commodity 2-4-6 Index levels
ROLL SEL LEAD CONTRACTS	<b><u>Roll Select Lead Contract File</u></b> Monthly file with the new selected contracts for the upcoming roll period (available 4 <sup>th</sup> business day of each month)

## Appendix R: Bloomberg Commodity Index Policies & Procedures

Bloomberg is committed to providing accuracy, transparency, and best practice policies in administration of BCOM. The Methodology is intended to comply with the principles of IOSCO, including Principle 11 (content of methodology) and 12 (changes to methodology).

### Methodology Changes

This index methodology undergoes a formal review process at least once each year to ensure its design still promotes a representative and accurate measure of the markets the index measures. Material changes are reviewed and approved by the IOC.

### Bloomberg Commodity Index Announcements

Bloomberg has developed various announcement types to notify clients of special occasions that apply to BCOM.

Announcement Type	Notification Date/Period	Frequency
BCOM Target Weights	End of October	Annual
BCOM Multipliers (CIMs)	4th Business Day of January	Annual
BCOM ex Agriculture & Livestock Capped Index CIMs	4th Business Day each Month	Monthly
BCOM Roll Select Contact Selection	4th Business Day each Month via FTP	Monthly
BCOM Methodology Changes	4 Weeks Advance Notice	As needed
BCOM File Format Changes	4 Weeks Advance Notice	As needed
BCOM File Changes (adding indices)	5 Days	As needed
BCOM Level & File Restatements (amendments)	Within 30 Minutes of Discovery	As needed
BCOM File Delays	Prior to 5PM EST	As needed

### BCOM Error Corrections/Restatement Policy

Bloomberg makes every effort to provide accuracy to the calculation of the BCOM Family. However, on instances where errors occur due to bad data or from technical issues, Bloomberg will then recalculate, republish, and redistribute the daily BCOM end-of-day files on the current day and before 12pm EST the next day. Bloomberg will inform clients on all BCOM index level restatements. In cases where errors are discovered after 12pm EST, Bloomberg will review internally and decide on a case-by-case basis whether index levels will be revised. Errors related to intraday levels will not be restated, as real-time levels are considered indicative only.

### BCOM Exchange Settlement Price Delays

In the event an Exchange delays the pricing of future settlements pertaining to the Bloomberg Commodity Index Family, Bloomberg will delay the posting of BCOM index levels to vendors and the delivery of end-of-day ftp files. Bloomberg will notify clients via an index announcement if the files will be delayed after 5PM EST.

### BCOM Exchange Settlement Price Amendments

On the occasion when an Exchange amends the settlement price of a contract used in the Bloomberg Commodity Index family prior to 7 PM EST, Bloomberg will send an index announcement within 30 minutes of the discovery to inform all clients of the correction. Bloomberg will then recalculate, republish, and redistribute the daily BCOM end-of day files along with a follow-up index announcement.



## Expert Judgment

Bloomberg may use expert judgment with regards to the following:

- Index restatements
- Extraordinary circumstances during a market emergency
- Pricing or other data interruptions, issues, and closures

When expert judgment is required, Bloomberg undertakes to be consistent in its application, with recourse to written procedures outlined in this methodology and internal procedures manuals. These procedures detail the steps in decision making and the hierarchy of data to be used. Material exercises of expert judgment are reviewed by senior members of the Bloomberg index and compliance teams. Bloomberg 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.

## Stress Events

In the event of an unforeseen market event whereby the commodity market is unexpectedly closed, the prior day's values will be used for underlying futures contracts.

## Index Compliance

To request a copy of the Bloomberg Indices complaints policy or to submit a complaint regarding a Bloomberg index or index determination, please send a correspondence to [complaints@bloombergindexes.com](mailto:complaints@bloombergindexes.com) or to the following postal address:

Bloomberg Indices  
c/o Bloomberg L.P.  
731 Lexington Ave.  
New York, NY 10022  
Attn: Index Compliance

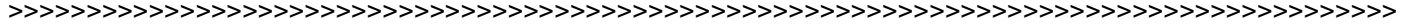
All such correspondence will be monitored by a member of the Bloomberg, L.P. compliance team. **IOSCO**

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