

# JPMORGAN CHASE & CO.

## ***Notes Linked to a J.P. Morgan Contag Conditional Index***

JPMorgan Chase & Co. may, from time to time, offer and sell notes linked to a J.P. Morgan Contag Conditional Index. This underlying supplement no. 8-I describes the J.P. Morgan Contag Conditional Indices, the relationship between JPMorgan Chase & Co. and the sponsor of the J.P. Morgan Contag Conditional Indices and terms that will apply generally to notes linked to a J.P. Morgan Contag Conditional Index and other relevant information. This underlying supplement no. 8-I supplements the terms described in the accompanying product supplement, prospectus supplement and prospectus. A separate term sheet or pricing supplement, as the case may be, will describe terms that apply to specific issuances of the notes, including any changes to the terms specified below. We refer to such term sheets and pricing supplements generally as terms supplements. The accompanying product supplement, the relevant terms supplement or another accompanying underlying supplement will describe any other index or reference asset to which the notes are linked. The accompanying product supplement or a separate underlying supplement will describe the S&P GSCI™ Index Excess Return and the S&P GSCI™ Light Energy Index Excess Return (each, an "S&P GSCI Index" and collectively, the "S&P GSCI Indices"), as applicable, referenced in the calculation of any relevant Contag Conditional Index. If the terms described in the relevant terms supplement are inconsistent with those described herein or in any other related underlying supplement or in the accompanying product supplement, prospectus supplement or prospectus, the terms described in the relevant terms supplement will control. In addition, if this underlying supplement no. 8-I and the accompanying product supplement or another accompanying underlying supplement contain information relating to the same index to which the notes are linked, the information contained in the document with the most recent date will control.

**The notes are not commodity futures contracts and are not regulated under the Commodity Exchange Act of 1936, as amended (the "Commodity Exchange Act").** The notes are offered pursuant to an exemption from regulation under the Commodity Exchange Act, commonly known as the hybrid instrument exemption, that is available to securities that have one or more payments indexed to the value, level or rate of one or more commodities, as set out in section 2(f) of that statute. Accordingly, you are not afforded any protection provided by the Commodity Exchange Act or any regulation promulgated by the Commodity Futures Trading Commission.

**Investing in the notes involves a number of risks. See "Risk Factors" in the accompanying product supplement and "Risk Factors" beginning on page US-3.**

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the notes or passed upon the accuracy or the adequacy of this underlying supplement no. 8-I, the accompanying product supplement, prospectus supplement and prospectus, or any other related underlying supplement or the relevant terms supplement. Any representation to the contrary is a criminal offense.

***The notes are not bank deposits and are not insured by the Federal Deposit Insurance Corporation or any other governmental agency, nor are they obligations of, or guaranteed by, a bank.***

J.P.Morgan

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We have not authorized anyone to provide any information other than that contained or incorporated by reference in the relevant terms supplement, any other related underlying supplement, this underlying supplement no. 8-I and the accompanying product supplement, prospectus supplement and prospectus with respect to the notes offered by the relevant terms supplement and with respect to JPMorgan Chase & Co. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This underlying supplement no. 8-I, together with the relevant terms supplement, any other related underlying supplement and the accompanying product supplement, prospectus supplement and prospectus, contains the terms of the notes and supersedes all other prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, fact sheets, brochures or other educational materials of ours. The information in the relevant terms supplement, any other related underlying supplement, this underlying supplement no. 8-I and the accompanying product supplement, prospectus supplement and prospectus may only be accurate as of the dates of each of these documents, respectively.

The notes described in the relevant terms supplement, the accompanying product supplement, any other related underlying supplement and this underlying supplement are not appropriate for all investors, and involve important legal and tax consequences and investment risks, which should be discussed with your professional advisers. You should be aware that the regulations of the Financial Industry Regulatory Authority, or FINRA, and the laws of certain jurisdictions (including regulations and laws that require brokers to ensure that investments are suitable for their customers) may limit the availability of the notes. The relevant terms supplement, this underlying supplement no. 8-I, any other related underlying supplement and the accompanying product supplement, prospectus supplement and prospectus do not constitute an offer to sell or a solicitation of an offer to buy the notes in any circumstances in which such offer or solicitation is unlawful.

In this underlying supplement no. 8-I, any other related underlying supplement, the relevant terms supplement and the accompanying product supplement, prospectus supplement and prospectus, “we,” “us” and “our” refer to JPMorgan Chase & Co., unless the context requires otherwise. To the extent applicable, each of the indices described in this underlying supplement no. 8-I are deemed to be one of the “Indices” referred to in the accompanying product supplement.

## SUPPLEMENTAL TERMS OF NOTES

*The following supplemental terms of the notes supplement, and to the extent they are inconsistent, supersede, the description of the general terms of the debt securities set forth in the accompanying product supplement and under the headings "Description of Notes" in the accompanying prospectus supplement and "Description of Debt Securities" in the accompanying prospectus. A separate terms supplement will describe the terms that apply to specific issuances of the notes, including any changes to the terms specified below. Capitalized terms used but not defined in this underlying supplement no. 8-I have the meanings assigned in the accompanying product supplement, prospectus supplement, prospectus, the relevant terms supplement and any other related underlying supplement.*

### General

The notes are senior unsecured obligations of JPMorgan Chase & Co. linked to the J.P. Morgan Contag Conditional Full Energy Excess Return Index (the "**Full Energy Contag Conditional Index**") or the J.P. Morgan Contag Conditional Light Energy Excess Return Index (the "**Light Energy Contag Conditional Index**"). We refer to each of the Full Energy Contag Conditional Index and the Light Energy Contag Conditional Index as a "**Contag Conditional Index**" and, collectively, as the "**Contag Conditional Indices**."

Each Contag Conditional Index reflects a synthetic long exposure to the relevant Long Constituent, and if the Conditional Long-Short Signal is Long-Short, a synthetic short exposure to the relevant Short Constituent. See "The J.P. Morgan Contag Conditional Indices" in this underlying supplement for more information about the Contag Conditional Indices.

The "**Long Constituent**" is the J.P. Morgan Contag Beta Full Energy Excess Return Index, with respect to the Full Energy Contag Conditional Index, and the J.P. Morgan Contag Beta Light Energy Excess Return Index, with respect to the Light Energy Contag Conditional Index. The sponsor of each Long Constituent (the "**Long Constituent Sponsor**") is currently J.P. Morgan Securities Ltd. ("**JPMSL**"). The calculation agent of each Long Constituent (the "**Long Constituent Calculation Agent**") is currently the JPMorgan Global Index Research Group ("**GIRG**"), a separate division of J.P. Morgan Securities LLC, which will use only employees of JPMorgan Chase Bank, National Association for purposes of calculating such Long Constituent Index. See "Background on the Long Constituents — The J.P. Morgan Contag Beta Indices" in this underlying supplement for more information about the Long Constituents.

The "**Short Constituent**" is the S&P GSCI™ Index Excess Return, with respect to the Full Energy Contag Conditional Index, and the S&P GSCI™ Light Energy Index Excess Return, with respect to the Light Energy Contag Conditional Index. See the descriptions of the S&P GSCI™ Index Excess Return and the S&P GSCI™ Light Energy Index Excess Return in the accompanying product supplement or another accompanying underlying supplement for more information about the Short Constituents.

We refer to each of the Long Constituent and the Short Constituent as a "**Constituent**" and, collectively, as the "**Constituents**."

The specific terms of the notes will be described in the relevant terms supplement accompanying this underlying supplement no. 8-I and any additional underlying supplement. The terms described in that document supplement those described herein and in any other related underlying supplement, the accompanying product supplement, prospectus supplement and prospectus. If the terms described in the relevant terms supplement are inconsistent with those described herein or in any other related

underlying supplement, the accompanying product supplement, prospectus supplement or prospectus, the terms described in the relevant terms supplement will control.

### **Payment at Maturity**

Notwithstanding any contrary definition in the accompanying product supplement, the “**Index Sponsor,**” with respect to a Contag Conditional Index, means, unless otherwise specified in the relevant terms supplement, the sponsor of such Contag Conditional Index, which is currently JPMSL.

Notwithstanding any contrary definition in the accompanying product supplement, the “**Index Calculation Agent,**” with respect to a Contag Conditional Index, means, unless otherwise specified in the relevant terms supplement, the entity that calculates and publishes the official closing level of such Contag Conditional Index, which is currently JPMSL. For more information about the Index Calculation Agent, see “The J.P. Morgan Contag Conditional Indices — Index Calculation Agent; Amendment of Rules; Limitation of Liability” in this underlying supplement.

## RISK FACTORS

*Your investment in the notes will involve certain risks. Investing in the notes is not equivalent to investing directly in a Contag Conditional Index, any of the Constituents underlying a Contag Conditional Index, any of the futures contracts underlying any Constituent or any futures contracts or exchange-traded or over-the-counter instruments based on, or other instruments linked to, any of the foregoing. You should consider carefully the risks discussed under "Risk Factors" in the accompanying product supplement and in any other related underlying supplement, together with the following discussion of additional risks, before you decide that an investment in the notes is suitable for you.*

There may be potential conflicts between your interests and those of JPMorgan Chase & Co., the Note Calculation Agent, the Index Calculation Agent, the Index Sponsor, the Long Constituent Calculation Agent, the Long Constituent Sponsor and other affiliates of ours.

We and our affiliates play a variety of roles in connection with the notes linked to the Contag Conditional Indices, including acting as issuer, Note Calculation Agent, Index Calculation Agent, Index Sponsor, Long Constituent Calculation Agent, Long Constituent Sponsor and hedging our obligations under such notes. In performing these duties, the economic interests of ours, the Note Calculation Agent, the Index Calculation Agent, the Index Sponsor, the Long Constituent Calculation Agent, the Long Constituent Sponsor and other affiliates of ours would be potentially adverse to your interests as an investor in such notes. Additionally, we and our affiliates may from time to time develop other indices or products that may take positions that are contrary to your economic interests.

**Our affiliate, JPMSL, as the Index Sponsor, the Index Calculation Agent and Long Constituent Sponsor, and our affiliate, GIRG, as the Long Constituent Calculation Agent, have the authority to make decisions and exercise judgment in specific instances in calculating and maintaining the Contag Conditional Indices and the Long Constituent, may adjust a Contag Conditional Index or the Long Constituent in a way that affects its level and are under no obligation to consider your interests as a holder of the notes.**

JPMSL, one of our affiliates, acts as the Index Calculation Agent, Index Sponsor and the Long Constituent Calculation Agent and is responsible for calculating and maintaining the Contag Conditional Indices, maintaining each Long Constituent and developing the guidelines and policies governing the composition and calculation of the Contag Conditional Indices and each Long Constituent. GIRG, one of our affiliates, acts as the Long Constituent Calculation Agent and is responsible for calculating each Long Constituent.

The rules governing the Contag Conditional Indices may be amended at any time by JPMSL, in its sole discretion, and the rules also permit the use of discretion by JPMSL in specific instances, such as the right to substitute another index as a Long Constituent or the right to substitute or exclude a futures contract included in a Long Constituent. In addition, the rules governing each Long Constituent will be interpreted by JPMSL and GIRG and may be amended at any time by JPMSL, in its sole discretion. The rules also permit GIRG to exercise decision-making authority and judgment in specific instances, including the right to substitute or exclude a futures contract included in the relevant Long Constituent and the right to determine the values to be used in the event of market disruptions that affect its ability to calculate and publish the level of each Long Constituent. In addition, the rules permit JPMSL to exercise decision-making authority and judgment in specific instances, including the right to replace or replicate an S&P GSCI Index (as defined below) if that applicable index is discontinued or materially modified. Unlike other indices, the maintenance of the Contag Conditional Indices and each Long Constituent is not governed by an independent committee. Although judgments, policies and determinations concerning the Contag Conditional Indices and each Long Constituent are and will be made by JPMSL and GIRG, as applicable, JPMorgan Chase & Co., as the parent company of JPMSL and GIRG, ultimately controls JPMSL and GIRG.

In addition, the policies and judgments for which JPMSL and GIRG are responsible could have an impact, positive or negative, on the level of the Contag Conditional Indices and each Long Constituent and the value of your notes. JPMSL and GIRG are under no obligation to consider your interests as an investor in the notes in taking any actions that might affect the value of your notes. Furthermore, the inclusion of a Constituent in a Contag Conditional Index or the inclusion of the relevant futures contracts in the relevant Long Constituent is not an investment recommendation by us, JPMSL or GIRG of that Constituent or those futures contracts.

**The commodity futures contracts underlying the Constituents are subject to legal and regulatory regimes that may change in ways that could result in the Long Constituent Calculation Agent making changes to the relevant Long Constituent, the Index Sponsor modifying the rules governing the Contag Conditional Indices or the Long Constituent Sponsor modifying the rules governing the relevant Long Constituent, any of which would impact the level of the Contag Conditional Index and, therefore, affect any payments under the notes.**

Changes to the legal or regulatory regimes applicable to the commodity futures contracts that underlie each Long Constituent may result in the Long Constituent Calculation Agent exercising its discretionary right under the rules governing the relevant Long Constituent to exclude or substitute any futures contract underlying, or substitute for a commodity the futures contracts of which underlie, the relevant Long Constituent, which may, in turn, have a negative effect on the value of any payments under the notes. The exclusion or substitution of futures contracts or commodities as described above could also affect the diversity of the relevant Long Constituent. For example, a substitute futures contract may have a lower level of backwardation than the original futures contract or the value of the substitute commodity could be more correlated with the value of other commodities the futures contracts of which underlie the relevant Long Constituent.

In addition, changes to the legal or regulatory regimes applicable to the commodity futures contracts that underlie the Contag Conditional Indices could also result in the Index Sponsor modifying the rules governing the Contag Conditional Indices or canceling the Contag Conditional Indices or the Long Constituent Sponsor modifying the rules governing the relevant Long Constituent or canceling the relevant Long Constituent, which could, in turn, have an adverse effect on any payments under the notes.

**The reported level of each of the Contag Conditional Indices includes the deduction of an adjustment factor.**

One way in which the Contag Conditional Indices differ from a typical index is that their daily reported level includes a deduction from the aggregate value of an adjustment factor assessed at an annual rate of 0.96%. This adjustment factor is deducted daily and calculated based on an actual/360 accrual basis. As a result of the deduction of this amount, the value of such indices will trail the value of a hypothetical identically constituted synthetic portfolio from which no such amount is deducted.

**Increases in the level of the relevant Long Constituent may be moderated, or more than offset, by increases in the level of the relevant Short Constituent.**

Each Contag Conditional Index is calculated by reference to the net return of long exposure to the relevant Long Constituent and, subject to the Long-Short Signal, short exposure to the relevant Short Constituent. Although the Constituents comprise futures contracts on commodities, the methodology behind, and calculation of, such Constituents, including the particular futures contracts included in the calculation of their value, are different. Each Long Constituent is calculated pursuant to the proprietary rules for that index developed by JPMSL, and each Short Constituent is calculated in accordance with the rules developed by S&P (as defined below). Price movements between the particular futures contracts underlying any Constituent may not correlate with each other. At a time when the value of the futures contracts underlying the relevant Short Constituent increases, the value of the futures contracts underlying the relevant Long Constituent may not increase as much or may decline. Increases in the level of the relevant Long Constituent may be moderated, or more than offset, by increases in the level of the relevant Short Constituent, which may have an adverse affect on the value of the notes.

**Because the Contag Conditional Indices may include notional short positions, the Contag Conditional Indices may be subject to additional risks.**

The Contag Conditional Indices will employ a technique generally known as “long-short” strategy in certain instances, depending on the Conditional Long-Short Signal. When a long-short strategy is employed, a Contag Conditional Index will have synthetic long exposure to the relevant Long Constituent and synthetic short exposure to the relevant Short Constituent. Unlike long positions, short positions are subject to unlimited risk of loss because there is no limit on the amount by which the price that the relevant asset may appreciate before the short position is closed. It is possible that the relevant Short Constituent may appreciate substantially with an adverse impact on the level of the relevant Contag Conditional Index and your notes.

**The Contag Conditional Indices do not represent fully diversified portfolios, are not representative of a pure commodities allocation and are not designed to replicate or track commodities markets generally or any or all of the futures contracts underlying the Contag Conditional Indices.**

The Contag Conditional Indices seek to reflect a long-short synthetic exposure to commodities by reference to either the return of an excess return commodity index or the net return of two excess return commodity indices, depending on the performance of an equally weighted basket of the 24 S&P GSCI™ single commodity sub-indices. However, their performance does not necessarily reflect the underlying performance of the commodities markets as a whole. In addition, each Long Constituent seeks to reflect a notional basket containing certain futures contracts that display the highest degree of backwardation (or in the absence of backwardation, the least amount of contango).

The Contag Conditional Indices are not designed to replicate or track commodities markets generally or any or all of the futures contracts underlying the Contag Conditional Indices. For any given period, the commodities markets or any or all of the futures contracts underlying the Contag Conditional Indices may have positive or significantly positive performance, and the Contag Conditional Indices may have negative or significantly negative performance, in absolute terms or relative to the commodities markets. An increase in the value of any commodity futures contract included in a Contag Conditional Index or any related commodity will not necessarily result in an increase in the level of such Contag Conditional Index. In addition, while diversification is generally considered to reduce the amount of risk associated with generating returns, there can be no assurance that any Contag Conditional Index will be sufficiently diversified at any time to reduce or minimize such risks to any extent.

**The Contag Conditional Indices comprise notional assets.**

The exposures to the commodity futures contracts underlying the Contag Conditional Indices are purely notional and will exist solely in the records maintained by or on behalf of the Index Calculation Agent. There is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. Consequently, you will not have any claim against any of the commodity futures contracts underlying the Contag Conditional Indices.

**The Contag Conditional Indices may not be successful and may not outperform any alternative strategy that might be employed with respect to the Constituents.**

The Contag Conditional Indices follow a proprietary strategy that operates on the basis of pre-determined rules. No assurance can be given that the investment strategy on which the Contag Conditional Indices are based will be successful or that the Contag Conditional Indices will outperform any alternative strategy that might be employed with respect to the Constituents or the futures contracts underlying the Constituents.

**An investment in the notes carries the risks associated with the methodology used to calculate the relevant Long Constituent.**

Each Long Constituent is constructed, in part, using a rules-based methodology that uses, along with other criteria, the slope of the commodity futures curve in order to select a particular futures contract for each eligible commodity in which to synthetically gain exposure (the “**Selection Methodology**”). The futures contract with the highest level of “backwardation” is selected for each eligible commodity (each, a “**Contag Contract**”), subject to certain limitations. “Backwardation” refers to the situation where commodity futures contracts with a delivery month further away in time have lower settlement prices than futures contracts with a delivery month closer in time. If there is no futures contract for one or more eligible commodities with backwardation, the Selection Methodology will select the futures contract with the lowest level of contango for any such commodities. “Contango” refers to the situation where the futures contracts for a commodity with a delivery month further in time have higher contract prices than futures contracts for the same commodity with a delivery month closer in time.

As the futures contracts approach expiration, they are replaced by futures contracts that have a later expiration in a process referred to as “rolling.” Assuming the commodity futures market is in backwardation, the sale of contracts due for delivery in a nearer delivery month would take place at a price that is higher than the price of contracts that are due for delivery in a later delivery month, creating a yield referred to as a “roll yield.” By capturing the synthetic return of a notional basket of futures contracts selected by the Selection Methodology, each Long Constituent seeks to capitalize on such “roll yield” and on the fact that contracts with backwardation tend to appreciate as those futures contracts draw nearer to expiration over time. The presence of “contango” in the commodity futures market (*i.e.*, where the prices for the relevant futures contracts included in the relevant Long Constituent are higher in the distant delivery month than in the nearer delivery month) could result in negative “roll yields.” Such contracts may also depreciate as they approach expiration. While the Selection Methodology is intended to select futures contracts with the highest level of backwardation (or in the absence of backwardation, the least amount of contango), commodity futures contracts generally have historically been in contango and no assurance can be given that the Selection Methodology will be successful in mitigating or avoiding contango and negative roll yields. Contango could adversely affect the level of the relevant Long Constituent and thus the value of notes linked to a Contag Conditional Index.

In addition, each Long Constituent is synthetically exposed to the futures contracts selected as the Contag Contracts by the Selection Methodology and such futures contracts may, in general, be deferred futures contracts (*i.e.*, those contracts having a delivery month further dated than the futures contract with the nearest delivery month). It is generally expected that such deferred futures contracts may have less liquidity than the near-month futures contracts (those being the nearest-to-deliver) with respect to the same commodities. Deferred futures contracts may also be less well correlated with the spot market (physical) prices of the relevant commodities and exhibit different levels of volatility. Accordingly, the relevant Long Constituent may not perform as well as an index linked to the spot prices of the relevant commodities.

No assurance can be given that the investment strategy on which the relevant Long Constituent is based will be successful or that the relevant Long Constituent will outperform any alternative strategy that might be employed.

**The Contag Conditional Indices and the Long Constituent have limited operating histories and may perform in unanticipated ways.**

The Contag Conditional Indices and the Long Constituent were established on May 29, 2009. As a result, the Contag Conditional Indices and the Long Constituent have limited historical performance. Any back-testing or similar analysis in respect of any Contag Conditional Index or Long Constituent



must be considered illustrative only and may be based on estimates or assumptions not used by the Index Calculation Agent or Long Constituent Calculation Agent, as applicable, when determining the level of the Contract Conditional Indices or the Long Constituent, as applicable. Past performance should not be considered indicative of future performance.

**Index calculation disruption events may require an adjustment to the calculation of the Long Constituent.**

At any time during the term of the notes, the daily calculation of the Long Constituent may be adjusted in the event that the Long Constituent Calculation Agent determines that any of the following index calculation disruption events exists: the termination or suspension of, or material limitation or disruption in the trading of any exchange-traded futures contract used in the calculation of the Long Constituent on that day; the settlement price of any exchange-traded futures contract used in the calculation of the Long Constituent reflects the maximum permitted price change from the previous day's settlement price; or the failure of an exchange to publish official settlement prices for any futures contract used in the calculation of the Long Constituent. Any such index calculation disruption events may have an impact on the level of the Long Constituent.

**Standard & Poor's Financial Services LLC ("S&P") may add new, or substitute for existing, commodities in the S&P GSCI™ Index Excess Return or the S&P GSCI™ Light Energy Index Excess Return (each, an "S&P GSCI Index" and collectively, the "S&P GSCI Indices"), respectively, which could affect the calculation and composition of the Long Constituent.**

A futures contract known as a "Designated Contract" has been selected as the reference contract for each of the underlying physical commodities included in the S&P GSCI Indices. The termination or replacement of a futures contract on an established exchange occurs infrequently; however, if one or more Designated Contracts were to be terminated or replaced by an exchange, a comparable futures contract would be selected, if available, to replace each such Designated Contract. In the event that a Designated Contract is added to the calculation of the applicable S&P GSCI Index that is not currently in the set of eligible commodities for the Long Constituent, such Designated Contract will be added as an eligible commodity for purposes of calculating the Long Constituent. S&P may also substitute for an existing commodity, which would also result in a change to the set of eligible commodities for the Long Constituent. The addition of a new eligible commodity, or the substitution for an existing commodity, could adversely affect the level of the Long Constituent and therefore, the value of your notes. See "Background on the Long Constituents — The J.P. Morgan Contag Beta Indices — Modifications to, or Cancellation of, the S&P GSCI Family-Index" and the descriptions of the S&P GSCI Indices in the accompanying product supplement or another accompanying underlying supplement for additional information.

**S&P has no obligation to consider your interests.**

S&P is responsible for calculating and maintaining the S&P GSCI Indices, including the Contract Production Weights of the Designated Contracts in the S&P GSCI Indices. The weights assigned to the commodities referenced in the Long Constituent are based on the Contract Production Weights of the relevant S&P GSCI Index. S&P can make methodological changes that could change the Contract Production Weights or their method of determination at any time, and S&P has no obligation to consider your interests. S&P may discontinue or suspend calculation or dissemination of the S&P GSCI Indices, including the Contract Production Weights. Any of these actions could adversely affect market value and/or any payments under the notes. See "Background on the Long Constituents — The J.P. Morgan Contag Beta Indices — Modifications to, or Cancellation of, the S&P GSCI Family-Index" and the descriptions of the S&P GSCI Indices in the accompanying product supplement or another accompanying underlying supplement for additional information. S&P has no obligation to consider your interests in calculating or revising the methodology of the S&P GSCI Indices.

**You will be exposed to risks associated with the Short Constituent.**

The accompanying product supplement or a separate underlying supplement will describe the risks associated with the Short Constituent referenced in the calculation of the relevant Contag Conditional Index.

The relevant terms supplement or a separate underlying supplement will provide additional risk factors relating to any Contag Conditional Index or any other index or reference assets to which the notes are linked.

## THE J.P. MORGAN CONTAG CONDITIONAL INDICES

### General

The J.P. Morgan Contag Conditional Full Energy Excess Return Index (the "Full Energy Contag Conditional Index") and the J.P. Morgan Contag Conditional Light Energy Excess Return Index (the "Light Energy Contag Conditional Index") were developed and are maintained and calculated by J.P. Morgan Securities Ltd. (which we refer to as "JPMSL"). We refer to each of the Full Energy Contag Conditional Index and the Light Energy Contag Conditional Index as a "Contag Conditional Index" and, collectively, as the "Contag Conditional Indices." Each Contag Conditional Index is a notional rules-based proprietary commodity index of JPMSL, reflecting a synthetic long exposure to the relevant Long Constituent, and if the Conditional Long-Short Signal is Long-Short, a synthetic short exposure to the relevant Short Constituent. For the Full Energy Contag Conditional Index, the Long Constituent is the J.P. Morgan Contag Beta Full Energy Excess Return Index and the Short Constituent is the S&P GSCI™ Index Excess Return. For the Light Energy Contag Conditional Index, the Long Constituent is the J.P. Morgan Contag Beta Light Energy Excess Return Index and the Short Constituent is the S&P GSCI™ Light Energy Index Excess Return. We refer to the Long Constituent and the Short Constituent for each Contag Conditional Index as the "Constituents."

The description of the strategy and methodology underlying the Contag Conditional Indices included in this underlying supplement is based on rules formulated by JPMSL (which we refer to as the "Contag Conditional Rules") and is qualified by the full text of the Contag Conditional Rules. The Contag Conditional Rules, and not this description, will govern the calculation and constitution of the Contag Conditional Indices and other decisions and actions related to their maintenance. The Contag Conditional Rules in effect as of the date of this underlying supplement are attached as Annex A to this underlying supplement. The Contag Conditional Rules are the intellectual property of JPMSL, and JPMSL reserves all rights with respect to its ownership of the Contag Conditional Indices. The Contag Conditional Indices were created on May 29, 2009 and therefore have limited historical performance.

Each Contag Conditional Index is an excess return index that is intended to capture the return of a synthetic long exposure to the relevant Long Constituent and, if the Conditional Long-Short Signal is Long-Short, a synthetic short exposure to the relevant Short Constituent. The Conditional Long-Short Signal will be "Long-Only" if the performance of an equally weighted basket of the 24 S&P GSCI™ single commodity sub-indices corresponding to the 24 commodities included in the S&P GSCI™ Index Excess Return as of January 2009 over the 12 months prior to the applicable observation date is positive and such positive performance is deemed to be consistent under the Equally Weighted Basket Consistency Test described below, and in all other cases, the Conditional Long-Short Signal will be "Long-Short."

The Contag Conditional Indices are rebalanced monthly on the Rebalancing Date, which is the first day of each calendar month on which the NYSE Euronext is scheduled to be open for its regular trading session. We refer to each day on which the NYSE Euronext is scheduled to be open for its regular trading session as a "Dealing Day." The Conditional Long-Short Signal determines, for each month, whether the relevant Contag Conditional Index will be in (a) "Alpha Mode," which means that the Conditional Long-Short Signal is Long-Short and the relevant Contag Conditional Index will attempt to capture, for the relevant period, synthetic long exposure to the relevant Long Constituent and synthetic short exposure to the relevant Short Constituent or (b) "Beta Mode," which means that the Conditional Long-Short Signal is Long-Only and the relevant Contag Conditional Index will attempt to capture, for the relevant period, synthetic long exposure to the Long Constituent only. Each Contag Conditional Index will benefit from a positive return in the relevant Long Constituent when the level of such Long Constituent increases and, if such Contag Conditional Index is in Alpha Mode, will benefit from a negative return in the relevant Short Constituent when the level of such Short Constituent decreases. Conversely, each Contag Conditional Index will suffer from a negative return in the relevant Long Constituent when the level of such Long Constituent decreases and, if such Contag Conditional Index is in Alpha Mode, will suffer from a positive return in the relevant Short Constituent when the level of such Short Constituent increases.

Each Contag Conditional Index is an excess return index because it tracks the return of up to two excess return commodity indices. Each of the Constituents for a Contag Conditional Index is an excess return index that reflects synthetic exposure to uncollateralized positions in the futures contracts underlying such Constituent, including any profit or loss realized when rolling such contracts.

The Long Constituent of each Contag Conditional Index is a notional rules-based proprietary index developed by JPMSL, which is intended to capture the return of the synthetic exposure to a notional basket consisting of 24 commodities (corresponding to the commodities included in the relevant Short Constituent), each represented by a commodity futures contract selected by a methodology developed by JPMSL, which we refer to as the "Selection Methodology." The Selection Methodology uses, along with other criteria, the slope of the futures curve for each eligible commodity to select the futures contract for each eligible commodity with the highest level of backwardation (or in the absence of backwardation, the least amount of contango), subject to certain limitations. "Backwardation" refers to the situation where the futures contracts for a commodity with a delivery month further in time have lower contract prices than futures contracts for the same commodity with a delivery month closer in time. "Contango" refers to the situation where the futures contracts for a commodity with a delivery month further in time have higher contract prices than futures contracts for the same commodity with a delivery month closer in time. The weightings of the commodities the futures contracts of which underlie each of the Long Constituents are determined, on an annual basis, by reference to the contract production weights calculated by Standard & Poor's Financial Services LLC for the S&P GSCI™ Index Excess Return.

Each Long Constituent and the Selection Methodology are described in further detail in "Background on the Long Constituents —The J.P. Morgan Contag Beta Indices."

The Short Constituent of each Contag Conditional Index is the excess return version of an S&P GSCI™ index (either the S&P GSCI™ Index Excess Return or the S&P GSCI™ Light Energy Index Excess Return), which is published by Standard & Poor's Financial Services LLC, which we refer to as "S&P." The S&P GSCI™ Index Excess Return is an excess return index on a world production-weighted basket of principal nonfinancial commodities (*i.e.*, physical commodities) that satisfy specified criteria. The S&P GSCI™ Light Energy Index Excess Return is a version of the S&P GSCI™ Index Excess Return that reflects lower exposure to the energy sector by dividing the contract production weights of each relevant energy contract by a factor equal to four, as of the date of this underlying supplement. Each Short Constituent is described in further detail in the descriptions of the S&P GSCI™ Index Excess Return and the S&P GSCI™ Light Energy Index Excess Return in the accompanying product supplement or another accompanying underlying supplement.

Each Contag Conditional Index is described as a "notional" or "synthetic" portfolio or basket because its reported value does not represent the value of any actual assets held by any person and there is no actual portfolio of assets in which any person has any ownership interest. The level of each Contag Conditional Index at any point is the return of the hypothetical uncollateralized portfolio of the Constituents. In addition, the value for each Contag Conditional Index at any point is adjusted by an adjustment factor (the "Replication Adjustment Factor") equivalent to 0.96% per year, calculated and deducted daily. Each Contag Conditional Index had an initial level of 100 as of December 30, 1994.

## Summary of Features

A summary of certain features for each Contag Conditional Index are set forth in the table below:

<i>Contag Conditional Index Name</i>	<i>Contag Conditional Index Ticker</i>	<i>Long Constituent and Ticker</i>	<i>Short Constituent and Ticker</i>	<i>Adjustment Factor</i>	<i>Rebalancing Date</i>	<i>Roll Period for Long Constituent</i>
J.P. Morgan Contag Conditional Full Energy Excess Return Index	JCTBCFEE	J.P. Morgan Contag Beta Full Energy Excess Return Index (JCTABFEE)	S&P GSCI™ Index Excess Return (SPGCCIP)	0.96% per year	first Dealing Day of each month	10 days
J.P. Morgan Contag Conditional Light Energy Excess Return Index	JCTBCLEE	J.P. Morgan Contag Beta Light Energy Excess Return Index (JCTABLEE)	S&P GSCI™ Light Energy Index Excess Return (SPGCLEP)	0.96% per year	first Dealing Day of each month	10 days

## Calculation and Publication of the Contag Conditional Index Level

JPMSL, or any affiliate or subsidiary designated by it, will act as calculation agent for the Contag Conditional Indices (the "Index Calculation Agent"). Subject to the occurrence or existence of a Market Disruption Event affecting a Constituent or a futures contract underlying such Constituent, the Index Calculation Agent will calculate and publish the value (the "Index Level") of each Contag Conditional Index on each Dealing Day, reported to four decimal places, on the Bloomberg ticker page identified for the relevant Contag Conditional Index in the table above.

"Eligible Commodity" means each commodity listed in Table 1 (*Eligible Commodities*) under "Background on the Long Constituents — The J.P. Morgan Contag Beta Indices — The Selection Methodology."

### *Index Rebalancing*

Subject to the occurrence of a Market Disruption Event, the Contag Conditional Index will be rebalanced on the first Dealing Day of each calendar month (each such day, a "Rebalancing Date") to adjust the synthetic exposure of the Contag Conditional Index to account for the performance of the Long Constituent (and, if the Conditional Long-Short Signal is Long-Short, the performance of the Short Constituent) since the immediately preceding Rebalancing Date.

### *The Conditional Long-Short Signal*

The Conditional Long-Short Signal determines whether the relevant Contag Conditional Index will be in Alpha Mode or Beta Mode for the relevant month, based on the performance of a synthetic, equally-weighted basket (which we refer to as the "Equally Weighted Basket") of the 24 S&P GSCI™

single commodity sub-indices corresponding to the 24 commodities included in the S&P GSCI™ Excess Return as of January 2009 (which we refer to as the “Reference Commodity Universe”) over a twelve-month period concluding on the Observation Date, which is the last Dealing Day in the month immediately preceding the relevant month of determination. We refer to this twelve-month performance of the Equally Weighted Basket as the “Equally Weighted Basket Performance.”

For each relevant month, the Index Calculation Agent will evaluate the Conditional Long-Short Signal as either:

- (a) Long-Only, if the Equally Weighted Basket Performance is greater than or equal to zero and the Equally Weighted Basket Consistency Test is successfully passed; or
- (b) in all other cases, Long-Short.

If the Conditional Long-Short Signal is Long-Only, the relevant Contag Conditional Index will be in Beta Mode for the relevant month and the Contag Conditional Index will have synthetic long exposure to the relevant Long Constituent for such month, and if the Conditional Long-Short Signal is Long-Short, then the relevant Contag Conditional Index will be in Alpha Mode for the relevant month and the Contag Conditional Index will have synthetic long exposure to the relevant Long Constituent and synthetic short exposure to the relevant Short Constituent for such month.

#### *Equally Weighted Basket Performance*

The Index Calculation Agent will calculate Equally Weighted Basket Performance on each Rebalancing Date in accordance with the following formula:

$$EW(Month_m) = \left[ \prod_{h=0}^{11} \left( \frac{1}{24} \cdot \sum_{i=1}^{24} \left( \frac{Level_i(Month_{m-h+1})}{Level_i(Month_{m-h})} \right) \right) - 1 \right]$$

where:

$Level_i(Month_{m-h+1})$  is the official closing level, in USD, of the i-th S&P GSCI™ single commodity sub-index in the Reference Commodity Universe at the close of the last Dealing Day of the calendar month  $h$  months before the Observation Date. For the avoidance of doubt, the month which is zero months before the Observation Date is the month in which said date occurs;

$Level_i(Month_{m-h})$  is the official closing level, in USD, of the i-th S&P GSCI™ single commodity sub-index in the Reference Commodity Universe at the close of the last Dealing Day of the calendar month  $h+1$  months before the Observation Date; and

$EW(Month_m)$  means the Equally Weighted Basket Performance measured over the twelve month period concluding on the Observation Date.

For example, for the Rebalancing Date that occurs on the first Dealing Day of February (subject to the occurrence of a Market Disruption Event), the Equally Weighted Basket Performance will be calculated by reference to the monthly change in the official closing level of the relevant indices during each of the prior twelve one-month periods (last Dealing Day in January compared to last Dealing Day in the December, last Dealing Day in December compared to last Dealing Day in November, etc.).

### *Equally Weighted Basket Consistency Test*

The Equally Weighted Basket Consistency Test algorithm obtains a measure of performance over the twelve monthly periods preceding the Rebalancing Date of the Equally Weighted Basket. The Equally Weighted Basket Consistency Test algorithm compares the dollar value of the Equally Weighted Basket as of the last Dealing Day of a given calendar month against the corresponding dollar value as of the last Dealing Day of the immediately previous calendar month. This comparison is performed for each of the months in the twelve-month period preceding the Rebalancing Date. Each month in the twelve-month period is assigned a different weight, which (1) if the equally basket performance for that month is positive, will range from 0.4 (for the monthly period occurring one year prior to the Rebalancing Date) to 2.0 (for the most recent month), or (2) in all other cases, will be equal to zero. In this way more recent monthly performances that are positive are attributed relatively greater weight than earlier monthly performances. The Equally Weighted Basket will pass the Equally Weighted Basket Consistency Test if the sum of the weights of the months in which the Equally Weighted Basket attained positive performance is equal to or greater than six.

The Index Calculation Agent will calculate the Equally Weighted Basket Consistency in accordance with the following formula:

$$ConsistencyEW(Month_m) = \sum_{h=0}^{h=11} IndicatorEW_i(Month_{m-h+1})$$

where:

$$IndicatorEW_i(Month_{m-h+1}) = \begin{cases} C_h, & \text{if } \frac{1}{24} \sum_{i=1}^{24} \left( \frac{Level_i(Month_{m-h+1})}{Level_i(Month_{m-h})} \right) - 1 > 0; \\ 0, & \text{otherwise} \end{cases}$$

where:

$Level_i(Month_{m-h+1})$  and  $Level_i(Month_{m-h})$  are defined in section 1(b)(i) above;

$C_h$  is defined by  $C_h = A \times e^{-r(h-1)}$ ;

where:

$e$  means the base of the natural logarithm;

$A, r$  are constants that are calibrated so that:  $\frac{C_1}{C_{12}} = 5$  and

$$\sum_{h=1}^{12} C_h = 12,$$

which gives  $A = 1.97449$ ,  $r = 0.14631$  to an accuracy of five decimal places.

If  $ConsistencyEW(Month_m) \geq 6$ , the Equally Weighted Basket Consistency Test will be successfully passed.

### ***The Index Level***

The Index Level for the Contag Conditional Index is determined in respect of each Dealing Day, by reference to the Index Level published in respect of the immediately preceding Rebalancing Date and the official closing level, reported in U.S. dollars, of the relevant Constituents on such Dealing Day and such immediately preceding Rebalancing Date. The Index Level for the Contag Conditional Index will be adjusted as a result of a Market Disruption Event as further described under “— Market Disruptions to the Index Level” below.

The Index Level of each Contag Conditional Index on December 30, 1994, the earliest Dealing Day in respect of which the time series of Index Level for each Contag Conditional Index is calculated and published by the Index Calculation Agent (the “Initial Index Day”) was 100. In respect of each Dealing Day following the Initial Index Day, the Index Calculation Agent calculates the Index Level for the Contag Conditional Index in accordance with the following formula:

$$Index(d) = \left[ Index(RD_{n-1}) + Index(RD_{n-1}) \times MTDP(d) \right] \times (1 - RAF_d);$$

where:

$Index(RD_{n-1})$  means the Index Level on the Rebalancing Date immediately preceding Dealing Day d, rounded to four decimals;

$MTDP(d)$  is the Month-to-Date Performance on Dealing Day d, calculated as described below; and

$RAF_d$  is the Replication Adjustment Factor, calculated as described below.

### ***Month- to- Date Performance***

The Month-to-Date Performance is calculated on each Dealing Day and represents the net return of synthetic unleveraged long exposure to the Long Constituent and, subject to the Conditional Long-Short Signal described above, synthetic short exposure to the Short Constituent since the Rebalancing Date immediately preceding such Dealing Day.

The Month-to-Date Performance (“MTDP”) is determined by the Index Calculation Agent in respect of each Dealing Day d in accordance with the following formula:

$$MTDP(d) = \left( \frac{Level_{Long}(d)}{Level_{Long}(RD_{n-1})} - 1 \right) - ShortWeight(RD_{n-1}) \times \left( \frac{Level_{Short}(d)}{Level_{Short}(RD_{n-1})} - 1 \right);$$

where:

$Level_{Long}(d)$  means the official closing level, in USD, of the Long Constituent on Dealing Day d;

$Level_{Short}(d)$  means the official closing level, in USD, of the Short Constituent on Dealing Day d, if applicable; and



$ShortWeight(RD_{n-1})$  means the Short Weight in respect of the Rebalancing Date immediately preceding Dealing Day d (“RD<sub>n-1</sub>”), determined as described below.

### ***The Short Weight***

The weighting given to the synthetic short exposure of the Contag Conditional Index to the relevant Short Constituent as of any Rebalancing Date is referred to as the (“Short Weight”). The Short Weight in respect of the Rebalancing Date falling in any relevant month will be 100% if the relevant Contag Conditional Index is in Alpha Mode for the relevant month and will be 0% if the relevant Contag Conditional Index is in Beta Mode for the relevant month.

### ***The Replication Adjustment Rate***

The Index Level for the J.P. Morgan Contag Conditional Full Energy Excess Return Index and the J.P. Morgan Contag Conditional Light Energy Excess Return Index is calculated and published net of an adjustment based on the Replication Adjustment Factor, which is calculated and deducted daily. The Index Calculation Agent will calculate the Replication Adjustment Factor as follows:

$$RAF_d = 1 - (1 - RAR)^{\frac{CalendarDays}{360}};$$

where:

$RAF_d$  is the Replication Adjustment Factor;

$RAR$  is a fixed percentage of 0.96% per annum (the “Replication Adjustment Rate”); and

*Calendar Days* is the number of calendar days from, and including, the Rebalancing Date immediately preceding Dealing Day d to, but excluding, Dealing Day d.

### **Publication of the Index Level**

The Index Calculation Agent may calculate the Contag Conditional Index values with greater frequency than daily on each Dealing Day and share this calculation with its affiliates for internal purposes.

The Index Calculation Agent will be under no obligation to any person to provide the Contag Conditional Index values by any alternative method if publication of the relevant Index Ticker identified in the table above is subject to any delay in or interruptions of publication or any act of God, act of governmental authority, or act of public enemy, or due to war, the outbreak or escalation of hostilities, fire, flood, civil commotion, insurrection, labor difficulty including, without limitation, any strike, other work stoppage, or slow-down, severe or adverse weather conditions, power failure, communications line or other technological failure that may occur or any other event beyond the control of the Index Calculation Agent.

The Contag Calculation Agent is under no obligation to continue the calculation, publication and dissemination of any of the Contag Conditional Indices or any Index Level.

## Market Disruptions to the Index Level

“Market Disruption Event” means:

(a) in respect of a Constituent and a Dealing Day (such Dealing Day a “Contag Conditional Disrupted Day” in respect of such Constituent), either:

(i) the occurrence or continuation on such Dealing Day of a Market Disruption Event in respect of any Futures Contract (as defined below) entering into the calculation of the closing level of such Constituent; or

(ii) the occurrence of a Non-Publication Event in respect of such Constituent and such Dealing Day;

(b) in respect of a Futures Contract and a Dealing Day (such Dealing Day a “Contag Conditional Disrupted Day” in respect of such Futures Contract), the occurrence of any of the following:

(i) a material limitation, suspension, discontinuation or disruption of trading of such Futures Contract which results in failure by the Relevant Exchange on which such Futures Contract(s) is/are traded to report an official settlement price for such Futures Contract(s);

(ii) a limitation, suspension or disruption of trading of such Futures Contract, by reason of movements exceeding “limit up” or “limit down” levels permitted by the Relevant Exchange and which, in the opinion of the Index Calculation Agent, is material to trading volume and market conditions in such Futures Contract on such Dealing Day;

(iii) publication by the Relevant Exchange of a “limit price” as the official settlement price for such Futures Contract (by reason of movements exceeding “limit up” or “limit down” levels permitted by the Relevant Exchange);

(iv) the Relevant Exchange for such Futures Contract not being open for trading during its regular trading session, regardless of whether any such exchange closes prior to its scheduled closing time.

“Non-Publication Event” means, with respect to a Constituent and a Dealing Day, the failure by the Relevant Exchange, any Index Sponsor or other price source to announce publicly or publish the following (or the information necessary for determining the following) with respect to such Dealing Day:

(a) the official settlement price for any relevant Futures Contract; or

(b) the closing level of such Constituent, in either case by 12:00 p.m (London time) on the immediately following Dealing Day,

*provided, however,* that the occurrence of such an event shall not constitute a “Non-Publication Event” in the case of clause (b) if the Index Calculation Agent determines in its sole discretion by 12:00 p.m. (London time) on such immediately following Dealing Day that the information necessary for determining the closing level of the relevant Constituent has been announced publicly or has been published by a Relevant Exchange, the Index Sponsor or other price source, in which case the Index Calculation Agent shall determine the official closing level, in USD, of such Constituent in good faith and in a commercially reasonable manner.

“Index Sponsor” means, in respect of any Constituent or S&P GSCI™ single commodity sub-index, the corporation or other entity that (a) is responsible for setting and reviewing the rules and procedures and the methods of calculation and adjustments, if any, related to the Constituent or S&P GSCI™ single commodity sub-index and (b) announces (directly or through an agent) the level of the Constituent or S&P GSCI™ single commodity sub-index on a regular basis.

“Relevant Exchange” means, in respect of an Eligible Commodity, the exchange on which such futures contract is listed, or any successor to such exchange.

If, with respect to any Dealing Day, a Market Disruption Event has occurred on such Dealing Day or the Rebalancing Date immediately preceding such Dealing Day, then the Index Level for such Dealing Day and for each subsequent Dealing Day until such day is not a Contag Conditional Disrupted Day will be equal to the Adjusted Index Level, calculated as follows:

- (i) the Index Level in respect of Dealing Day  $t$  shall be equal to the Adjusted Index Level (as defined below) in respect of  $t$  and observed as at  $t$  ( $AdjIndex_t(t)$ ), calculated and published by the Index Calculation Agent where, for the avoidance of doubt,  $AdjIndex_t(t)$  is calculated in accordance with the following procedure for calculating  $AdjIndex_s(d)$  in the particular case that  $s$  is equal to  $t$  and  $d$  is equal to  $t$ ; and
- (ii) the Index Calculation Agent shall calculate the Adjusted Index Level in respect of  $t$  and observed as at each Dealing Day  $s$  from and following  $t$ , until the first Dealing Day  $s'$  for which, in respect of each Futures Contract entering into the calculation of the Index, there has been at least one Dealing Day (from, and including,  $t$  to, and including,  $s'$ ) which is not a Contag Conditional Disrupted Day. The Adjusted Index Level in respect of  $t$  and observed as at such Dealing Day  $s'$  ( $AdjIndex_{s'}(t)$ ) shall be the “Final Adjusted Index Level.” It follows from the procedure described below that  $s'$  shall occur no later than five Dealing Days following  $t$ . For the avoidance of doubt,  $AdjIndex_{s'}(t)$ , calculated in accordance the following procedure for calculating  $AdjIndex_s(d)$  in the particular case that  $s$  is equal to  $s'$  and  $d$  is equal to  $t$ ,

all, in accordance with the following formula:

$$AdjIndex_s(d) = \left[ AdjIndex_s(RD_{n-1}) + AdjIndex_{RD_{n-1}}(RD_{n-1}) \times AdjMTDP_s(d) \right] \times (1 - RAF_d) ;$$

where:

$AdjIndex_s(d)$  means the Adjusted Index Level in respect of  $d$  observed as at  $s$

$AdjMTDP_s(d)$  means the Adjusted Month-to-Date Performance in respect of Dealing Day  $d$  and observed as at Dealing Day  $s$ , defined as follows:

$$AdjMTDP_s(d) = \left( \frac{AdjLevel_{Long,s}(d)}{AdjLevel_{Long,s}(RD_{n-1})} - 1 \right) - ShortWeight(RD_{n-1}) \left( \frac{AdjLevel_{Short,s}(d)}{AdjLevel_{Short,s}(RD_{n-1})} - 1 \right) ;$$

$AdjIndex_s(RD_{n-1})$  means the Adjusted Index Level in respect of  $RD_{n-1}$  as observed at Dealing Day  $s$ ;

$AdjIndex_{RD_{n-1}}(RD_{n-1})$  means the Adjusted Index Level in respect of  $RD_{n-1}$  as observed at  $RD_{n-1}$ ;

where:

$AdjLevel_{Long,s}(RD_{n-1})$  means  $AdjLevel_{c,s}(d)$  where  $c$  is the Long Constituent and  $d$  is  $RD_{n-1}$ ;

$AdjLevel_{Short,s}(RD_{n-1})$	means $AdjLevel_{c,s}(d)$ where $c$ is the Short Constituent and $d$ is $RD_{n-1}$ ;
$AdjLevel_{Long,s}(d)$	means $AdjLevel_{c,s}(d)$ where $c$ is the Long Constituent;
$AdjLevel_{Short,s}(d)$	means $AdjLevel_{c,s}(d)$ where $c$ is the Short Constituent;
$AdjLevel_{c,s}(d)$	means the Adjusted official closing level as published by the relevant Index Sponsor (the "USD Level") of Constituent $c$ in respect of Dealing Day $d$ and observed as at Dealing Day $s$ , defined as follows:

(x) if Dealing Day  $d$  is not a Contag Conditional Disrupted Day in respect of any Futures Contract entering into the calculation of the closing level of Constituent  $c$ , the USD Level of Constituent  $c$  on Dealing Day  $d$ ; otherwise,

(y) the level for Constituent  $c$  calculated by the Index Calculation Agent in respect of Dealing Day  $d$  in accordance with the rules of Constituent  $c$  by reference to:

- i. with respect to each Futures Contract included in Constituent  $c$  which is not affected by a Market Disruption Event on  $d$ , the settlement price of such Futures Contract on Dealing Day  $d$  as published by the Relevant Exchange; and
- ii. with respect to each Futures Contract included in Constituent  $c$  which is affected by a Market Disruption Event on Dealing Day  $d$  (each an "Affected Futures Contract"):

(A) the settlement price of each such Affected Futures Contract as published by the Relevant Exchange on the Dealing Day which was first to occur during the period from, and including, Dealing Day  $d$  to, and including, Dealing Day  $s$  on which no Market Disruption Event exists or is occurring with respect to such Affected Futures Contract; or

(B) in the case that there is no such Dealing Day as mentioned in (a) above, the settlement price of such Affected Futures Contract as published by the Relevant Exchange on the most recent Dealing Day on or before Dealing Day  $s$  on which a settlement price has been published for such Affected Futures Contract (whether or not there has been a Market Disruption Event on such day),

*provided, that*, if a Market Disruption Event continues for five consecutive Dealing Days following Dealing Day  $d$ , the price of such Affected Futures Contract used by the Index Calculation Agent in determining the level for Constituent  $c$  in respect of Dealing Day  $d$  (the "Index Calculation Agent Determined Price") shall be determined by the Index Calculation Agent acting in good faith and using such information and/or methods as it deems appropriate (notwithstanding the existence of a Market Disruption Event), and in such case such Index Calculation Agent Determined Price for such Affected Futures Contract will apply in the determination of Adjusted USD Level of Constituent  $c$  in respect of Dealing Day  $d$  and as observed at each Dealing Day following  $d + 5$ .

## Extraordinary Events Affecting the Constituents

### *Successor Index Sponsor or Successor Constituent*

If the Long Consistent or the Short Constituent for a Contag Conditional Index is (a) not calculated and announced by the Index Sponsor, but is calculated and announced by a successor index sponsor acceptable to the Index Calculation Agent, or (b) replaced by a successor Constituent using, in the determination of the Index Calculation Agent, the same or substantially similar formula for and method of calculation as used in the calculation of such Constituent, then such index will be deemed to be the index so calculated and announced by that successor index sponsor or that successor index, as the case may be.

### *Material Change to Constituent*

If, on or prior to any Dealing Day on which the Index Calculation Agent is determining the Index Level of a Contag Conditional Index, the Index Sponsor makes a material change in the formula for, or the method of calculating, any Constituent (other than a modification prescribed in that formula or method to maintain such Constituent or prescribed routine events) then the Index Calculation Agent shall, in good faith, make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, specified input or any other rule in relation to the Contag Conditional Index to account for such modification.

### *Constituent Exclusion and Substitution*

If, on or prior to any Dealing Day on which the Index Calculation Agent is determining the Index Level of a Contag Conditional Index, an Index Sponsor permanently cancels any Constituent, and no successor index exists, the Index Calculation Agent shall, in good faith, make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, valuation terms or any other rule in relation to the Contag Conditional Index to account for such cancellation.

### *Change in Law/ Inaccurate Futures Contract Prices*

Without prejudice to the ability of the Index Calculation Agent to amend the Contag Conditional Rules as described elsewhere in this underlying supplement, the Index Calculation Agent may, acting in good faith and in a commercially reasonable manner:

- (a) exclude; or
- (b) substitute,

any Futures Contract following the occurrence (and/or continuation) of a Change in Law or in circumstances where it considers it reasonably necessary to do so to reflect the intention of the Contag Conditional Indices, including (without prejudice to the generality of the foregoing) any perception among market participants generally that the published price of the relevant Futures Contract is inaccurate (and the Relevant Exchange fails to correct such level), and if it so excludes or substitutes any Futures Contract, then the Index Calculation Agent may adjust the Contag Conditional Rules as it determines in good faith to be appropriate to account for such exclusion or substitution on such date(s) selected by the Index Calculation Agent. The Index Calculation Agent is under no obligation to continue the calculation and publication of any Contag Conditional Index upon the occurrence or existence of a Change in Law; and the Index Calculation Agent may decide to cancel any Contag Conditional Index if it determines, acting in good faith, that the objective of the relevant Contag Conditional Index can no longer be achieved.

“Change in Law” means:

(a) due to:

(i) the adoption of, or any change in, any applicable law, regulation, rule or order (including, without limitation, any tax law); or

(ii) the promulgation of, or any change in, the interpretation, application, exercise or operation by any court, tribunal, regulatory authority, exchange or trading facility or any other relevant entity with competent jurisdiction of any applicable law, rule, regulation, order, decision or determination (including, without limitation, as implemented by the U.S. Commodity and Futures Trading Commission or exchange or trading facility),

in each case, the Index Calculation Agent determines in good faith that (x) it is contrary (or, upon adoption, it will be contrary) to such law, rule, regulation, order, decision or determination for any market participants that are brokers or financial intermediaries (individually or collectively) to purchase, sell, enter into, maintain, hold, acquire or dispose of any Futures Contract (in whole or in part) (in the aggregate on a portfolio basis or incrementally on a trade by trade basis) or any transaction referencing any Futures Contract or, (y) holding a position in any Futures Contract or any transaction referencing any Futures Contract is (or, but for the consequent disposal or termination thereof, would otherwise be) in excess of any allowable position limit(s) applicable to any market participants that are brokers or financial intermediaries (individually or collectively) under any such law, rule, regulation or order in relation to such Futures Contract traded on any exchange(s) or other trading facility (including, without limitation, any Relevant Exchange); or

(b) the occurrence or existence of any:

(i) suspension or limitation imposed on trading commodity futures contracts (including, without limitation, the Futures Contracts); or

(ii) any other event that causes trading in commodity futures contracts (including, without limitation, the Futures Contracts) to cease.

### **Corrections**

In the event that (a) the USD Level of any Constituent used to calculate the Index Level in respect of any Dealing Day is subsequently corrected and the correction is published by the Index Sponsor before the next following Rebalancing Date, or (b) the Index Calculation Agent identifies an error or omission in any of its calculations or determinations in respect of the Contag Conditional Indices, then the Index Calculation Agent may, if practicable and the correction is deemed material by the Index Calculation Agent, adjust or correct the Index Level published in respect of the relevant Dealing Day and each subsequent Dealing Day and publish such corrected Index Level(s) as soon as reasonably practicable.

### **Index Calculation Agent; Amendment of Rules; Limitation of Liability**

The Rules provide that the Index Calculation Agent must act in good faith and in a commercially reasonable manner. In the event that ambiguities arise in interpreting or applying the Contag Conditional Rules, the Index Calculation Agent will resolve ambiguities in a reasonable manner and, if necessary, amend the Rules to reflect such resolution.

Neither the Index Calculation Agent nor any of its affiliates or subsidiaries or any of their respective directors, officers, employees, delegates or agents (each a “Relevant Person”) shall have any responsibility to any person (whether as a result of negligence or otherwise) for any determinations

made or anything done (or omitted to be determined or done) in respect of the Contag Conditional Indices or in respect of the publication of the Index Level (or failure to publish such Index Level) and any use to which any person may put the Contag Conditional Indices or the Index Levels.

Neither the Index Calculation Agent nor any Relevant Person shall have any liability, contingent or otherwise, to any person or entity for the quality, accuracy, timeliness or completeness of the information or data contained in the Contag Conditional Rules or the Contag Conditional Indices, or for delays, omissions or interruptions in the delivery of the Contag Conditional Indices or related data. Neither the Index Calculation Agent nor any Relevant Person makes any warranty, express or implied, as to the results to be obtained by any person or entity in connection with any use of the Contag Conditional Indices, including but not limited to the trading of or investments in products based on or indexed or otherwise related to the Contag Conditional Indices, any data related thereto or any components thereof.

Neither the Index Calculation Agent nor any Relevant Person makes any express or implied warranties, and hereby expressly disclaims, to the fullest extent permitted by law, all warranties of merchantability or fitness for a particular purpose or use with respect to the Rules, the Contag Conditional Indices or any data related thereto. Without limiting any of the foregoing, in no event shall either the Index Calculation Agent or any Relevant Person have any liability for any special, punitive, indirect or consequential damages (including lost profits), in connection with any use by any person of the Contag Conditional Indices or any products based on or indexed or otherwise related thereto, even if notified of the possibility of such damages.

All determinations of the Index Calculation Agent in respect of the Contag Conditional Indices shall be final, conclusive and binding and no person shall be entitled to make any claim against any of the Relevant Persons in respect thereof. Once a determination or calculation is made or action taken by the Index Calculation Agent or any other Relevant Person in respect of the Contag Conditional Indices, neither the Index Calculation Agent nor any other Relevant Person shall be under any obligation to revise any determination or calculation made or action taken for any reason.

## BACKGROUND ON THE LONG CONSTITUENTS — THE J.P. MORGAN CONTAG BETA INDICES

### General

The J.P. Morgan Contag Conditional Full Energy Excess Return Index is linked, in part, to a synthetic long exposure to the performance of the J.P. Morgan Contag Beta Full Energy Excess Return Index (the “Full Energy Contag Beta Index”). The J.P. Morgan Contag Conditional Light Energy Excess Return Index is linked, in part, to a synthetic long exposure to the performance of the J.P. Morgan Contag Beta Light Energy Excess Return Index (the “Light Energy Contag Beta Index”). We refer to each of the Full Energy Contag Beta Index and the Light Energy Contag Beta Index as a “Long Constituent” or a “Contag Beta Index” and collectively, as the “Contag Beta Indices.”

The Contag Beta Indices were developed and are maintained by JPMSL and are calculated by the JPMorgan Global Index Research Group (“GIRG”), a separate division of J.P. Morgan Securities LLC, which will use only employees of JPMorgan Chase Bank, National Association for purposes of calculating the Contag Beta Indices. Each Contag Beta Index is a notional rules-based proprietary indices developed by JPMSL, which are intended to capture the return of the synthetic exposure to a notional basket consisting of 24 commodities, each of which is represented by a commodity futures contract selected by a methodology developed by JPMSL, which we refer to as the “Selection Methodology.” The Selection Methodology uses the slope of the futures curve for each eligible commodity to select the futures contract for each eligible commodity with the highest level of backwardation (or in the absence of backwardation, the least amount of contango), subject to certain limitations. “Backwardation” refers to the situation where the futures contracts for a commodity with a delivery month further in time have lower contract prices than futures contracts for the same commodity with a delivery month closer in time. “Contango” refers to the situation where the futures contracts for a commodity with a delivery month further in time have higher contract prices than futures contracts for the same commodity with a delivery month closer in time.

The description of the strategy and methodology underlying the Contag Beta Indices (including the Selection Methodology) included in this underlying supplement is based on rules formulated by JPMSL (which we refer to as the “Contag Beta Rules”) and is qualified by the full text of the Contag Beta Rules. The Contag Beta Rules, and not this description, will govern the calculation and constitution of the Contag Beta Indices and other decisions and actions related to their maintenance. The Contag Beta Rules in effect as of the date of this underlying supplement are attached as Annex B to this underlying supplement. The Contag Beta Rules are the intellectual property of JPMSL, and JPMSL reserves all rights with respect to its ownership of the Contag Beta Indices. The Contag Beta Indices were created on May 29, 2009 and therefore have limited historical performance.

Each Contag Beta Index is an excess return index that is intended to capture the return of synthetic long exposure to a Nominal Basket consisting of the Contag Contracts for each of 24 Eligible Commodities during each relevant month selected by the Selection Methodology, including the effect of the monthly composition change of such Contag Beta Index due to the roll from the Contag Contract for each commodity listed in Table 1 (*Eligible Commodities*) under “— Selection Methodology” below (which we refer to as an “Eligible Commodity”) for a relevant month to the Contag Contract for each Eligible Commodity for the next relevant month. The “Contag Contract” for each Eligible Commodity is the futures contract for such Eligible Commodity selected according to the Selection Methodology as the one with the highest level of backwardation (or in the absence of backwardation, the least amount of contango), subject to certain limitations. The “Eligible Commodities” are the 24 commodities that are currently represented by the S&P GSCI™ and are set forth in Table 1 (*Eligible Commodities*) under “— Selection Methodology” below. Each month, the Selection Methodology will determine the Contag Contracts to which the Contag Beta Indices should be synthetically exposed, based on the settlement price of the futures contracts as published by the relevant exchange (which we refer to as the “Contract Price”) for the last Dealing Day of the calendar month immediately preceding the relevant month (each of which we refer to as a “Contract Selection Date”). A “Dealing Day” is a day on which the NYSE Euronext is scheduled to open for trading for its



regular trading session. When a new Contag Contract is selected, each Contag Beta Index transfers its synthetic exposure from the previously selected Contag Contract to the new Contag Contract, such exposure being gradually transferred in equal percentages per Dealing Day over a roll period in order to limit any adverse impact of such rolling process on the level of the relevant Contag Beta Index. The Selection Methodology is described in further detail under “— Selection Methodology” below.

The Contag Beta Indices are rebalanced monthly on the Rebalancing Date, which is the first day of each calendar month on which the NYSE Euronext is scheduled to be open for its regular trading session.

The Selection Methodology uses, among other criteria, the slope of the futures curve for each Eligible Commodity to select the futures contract for each Eligible Commodity with the highest level of backwardation (subject to certain limitations). “Backwardation” refers to the situation where the futures contracts for a commodity with a delivery month further in time have lower contract prices than futures contracts for the same commodity with a delivery month closer in time. If there is no futures contract for one or more eligible commodities with backwardation, the Selection Methodology will select the futures contract with the lowest level of contango for any such commodities. “Contango” refers to the situation where the futures contracts for a commodity with a delivery month further in time have higher contract prices than futures contracts for the same commodity with a delivery month closer in time. The weightings of the commodities the futures contracts of which underlie each of the Contag Beta Indices are determined, on an annual basis, by reference to the contract production weights calculated by Standard & Poor’s Financial Services LLC (“S&P”) for the S&P GSCI™ Index Excess Return or the S&P GSCI™ Light Energy Index (each, a “S&P GSCI Family-Index”). Please see the descriptions of the S&P GSCI™ Index Excess Return and the S&P GSCI™ Light Energy Index Excess Return in the accompanying product supplement or another accompanying underlying supplement for additional information.

Each Contag Beta Index is described as a “notional” or “synthetic” portfolio or basket because its reported level does not represent the value of any actual assets held by any person and there is no actual portfolio of assets in which any person has any ownership interest. The level of each Contag Beta Index at any point is the return of the hypothetical uncollateralized portfolio of the relevant Contag Contracts, which are weighted in accordance with the weighting algorithm described below. Each Contag Beta Index had an initial level of 100 as of December 30, 1994 (which we refer to as the “Initial Index Day”).

### **Calculation and Publication of the Contag Beta Index Level**

JPMSL, the sponsor of the Contag Beta Indices (the “Long Constituent Sponsor”), has designated GIRG to act as calculation agent for the Contag Beta Indices (the “Long Constituent Calculation Agent”).

Subject to the occurrence of a Market Disruption (as described below), the Long Constituent Calculation Agent will calculate and publish the level of each Contag Beta Index on each Dealing Day (which we refer to as the “Index Level”), reported to four decimal places, on the Bloomberg ticker page identified for the relevant Contag Beta Index in the table under “The J.P. Morgan Contag Conditional Indices — Summary of Features” in this underlying supplement.

### ***Commodity Weights***

#### ***Determining Commodity Weights***

Each Eligible Commodity included in the Nominal Basket is attributed a decimal number that represents the number of units of such Eligible Commodity included in the Nominal Basket used to calculate the Index Level for the Contag Beta Index, referred to as a “Commodity Weight.” The difference between the J.P. Morgan Contag Beta Full Energy Excess Return Index and the J.P. Morgan Contag Beta Light Energy Excess Return Index is the way in which the Commodity Weights are determined.

The Commodity Weight for each Eligible Commodity in the J.P. Morgan Contag Beta Full Energy Excess Return Index is equal to the Contract Production Weight of the relevant Designated Contract in the S&P GSCI™ (Bloomberg ticker: SPGCCIP Index) for the S&P GSCI Period corresponding to the relevant Weights Period for the J.P. Morgan Contag Beta Full Energy Excess Return Index, as specified in the document setting out the rules of the S&P GSCI™ indices entitled “S&P GSCI™ Index Methodology” as updated, modified and superseded from time to time by S&P, the sponsor of the S&P GSCI™, which we refer to as the “S&P GSCI Index Sponsor” (the “S&P GSCI Methodology”).

The Commodity Weight for each Eligible Commodity in the J.P. Morgan Contag Beta Light Energy Excess Return Index is equal to the Contract Production Weight of the relevant Designated Contract in the S&P GSCI™ Light Energy Index (Bloomberg ticker: SPGCLEP Index) for the S&P GSCI Period corresponding to the relevant Weights Period for the J.P. Morgan Contag Beta Light Energy Excess Return Index, as specified in the S&P GSCI Methodology.

Each Commodity Weight for an Eligible Commodity is calculated with respect to a Weights Period. The “Weights Period” for the J.P. Morgan Contag Beta Full Energy Excess Return Index and the J.P. Morgan Contag Beta Light Energy Excess Return Index is the period beginning on the first calendar day of the first month of the S&P GSCI Period, to and including the last calendar day of the month immediately preceding the last day of the S&P GSCI Period.

“Contract Production Weight,” with respect to each Eligible Commodity, means the Contract Production Weight assigned to that Designated Contract included in the S&P GSCI™ or the S&P GSCI™ Light Energy Index, as applicable, in accordance with the S&P GSCI Methodology. As at the date of this underlying supplement, the Contract Production Weights, or CPWs, used in calculating the S&P GSCI™ are derived from world or regional production averages, as applicable, of the relevant commodities, and are calculated based on the total quantity traded for the relevant contract and the world or regional production average, as applicable, of the underlying commodity. However, if the volume of trading in the relevant contract, as a multiple of the production levels of the commodity, is below specified thresholds, the CPW of the contract is reduced until the threshold is satisfied. This is designed to ensure that trading in each such contract is sufficiently liquid relative to the production of the commodity. The CPW for the energy-related commodities in the S&P GSCI™ is divided by 4 to get the CPW for the Designated Contracts included in the S&P GSCI™ Light Energy Index.

“Designated Contract” has the same meaning as in the S&P GSCI Methodology. As at the date of this underlying supplement, “Designated Contract” means a particular contract included in the S&P GSCI for a given S&P GSCI Period, based on eligibility criteria set forth in section II of the S&P GSCI Methodology.

“S&P GSCI Period” has the same meaning as in the S&P GSCI Methodology. As at the date of this underlying supplement, “S&P GSCI Period” means the period beginning on the fifth S&P GSCI Business Day of the calendar month in which new Contract Production Weights first become effective, and ending on the S&P GSCI Business Day immediately preceding the first day of the next following S&P GSCI Period.

“S&P GSCI Business Day” means a day on which the S&P GSCI™ indices are calculated, as determined by the NYSE Euronext holiday & hours schedule.

#### *Regular Amendments to Commodity Weights*

The Commodity Weights in respect of the Contag Beta Indices are determined by reference to the Contract Production Weights as specified in the S&P GSCI Methodology and as described above. The Commodity Weights for the Contag Beta Indices are expected to change on an annual basis in line with the frequency with which the Contract Production Weights are routinely updated by the S&P GSCI Index Sponsor. From time to time the S&P GSCI Index Sponsor may change the Contract Production Weights on an intra-annual basis, in which case a new S&P GSCI Period will begin, in which case

corresponding changes will be made by the Long Constituent Sponsor to the Weights Period for the Contag Beta Indices. The Commodity Weights for the Contag Beta Indices in respect of a given Weights Period will always be equal to the Contract Production Weights in respect of the corresponding S&P GSCI Period.

### ***Normalizing Constant***

The “Normalizing Constant” is a number associated with each Weights Period, and is an adjustment to allow for the fact that the Commodity Weights change from one Weights Period to the next. The Commodity Weights are not percentage weights which would sum to 100% in the Nominal Basket in all cases, and accordingly, changes in the Commodity Weights may have the unintended effect of increasing or decreasing the total weight of the Nominal Basket. This, in turn, could distort the intended rate of rolling from the applicable Contag Contracts for the month preceding the current month (which we refer to as the “Outgoing Contracts”) to the applicable Contag Contracts for the current month (which we refer to as the “Incoming Contracts”). Such rolling occurs in the sequence of Dealing Days over which the exposure of the Contag Beta Index is rolled from the Outgoing Contracts to the Incoming Contracts (the “Roll Period”). The monthly Roll Period for each Contag Beta Index is the first 10 Dealing Days of the relevant month.

A new Normalizing Constant (which we refer to as the “New Normalizing Constant”) is determined by the Long Constituent Calculation Agent with respect to each subsequent Weights Period (which we refer to as the “New Weights Period”) based on:

- (a) the Contract Prices on the Dealing Day immediately preceding the first Dealing Day of the first Roll Period of the New Weights Period;
- (b) the Commodity Weights for (x) the New Weights Period and (y) the Weights Period immediately preceding the New Weights Period (which we refer to as the “Old Weights Period”); and
- (c) the Normalizing Constant associated with the Old Weights Period (which we refer to as the “Old Normalizing Constant”).

The Normalizing Constant:

- (a) for the Weights Period following the Initial Index Day is 1,000; and
- (b) thereafter, for any New Weights Period, is determined by the Long Constituent Calculation Agent in accordance with the following formula:

$$NC_{new} = NC_{old} \times \frac{\sum_c CWI_d^c \times CPO_d^c (d-1)}{\sum_c CWO_d^c \times CPO_d^c (d-1)}$$

where:

$NC_{new}$  means the New Normalizing Constant;

$NC_{old}$  means the Old Normalizing Constant, being 1,000 if the Old Weights Period is the first Weights Period;

$CWI_d^c$  means the Commodity Weight in respect of Dealing Day d and Eligible Commodity c for the Weights Period in which such Dealing Day falls (the “Commodity Weight Incoming”);

$CWO_d^c$  means the Commodity Weight in respect Dealing Day d and Eligible Commodity c for the Weights Period for the month immediately preceding the relevant month in which such Dealing Day falls (the "Commodity Weight Outgoing");

$CPO_d^c (d-1)$  means the Contract Price on Dealing Day vd (the "Valuation Day") of the Outgoing Contract for Dealing Day cd (the "Composition Day") (the "Contract Price Outgoing") in respect of Eligible Commodity c with Composition Day d and Valuation Day d-1; and

d means the first Dealing Day of the first Roll Period of the New Weights Period.

The New Normalizing Constant is applicable to the whole of the New Weights Period. During the first Roll Period of the New Weights Period, the Nominal Basket will be based on a combination of the Commodity Weights for the Old Weights Period and the Commodity Weights for the New Weights Period.

The Commodity Weights given to the Outgoing Contracts is adjusted by the ratio of the New Normalizing Constant to the Old Normalizing Constant as described further in " — The Nominal Basket."

### ***Contract Roll Weights***

The exposure of each Contag Beta Index to the Contag Contract in respect of an Eligible Commodity is rolled from the Outgoing Contract to the Incoming Contract over the course of a Roll Period. The Outgoing Contracts and the Incoming Contracts for an Eligible Commodity are assigned a weighting (which we refer to as the "Contract Roll Weight Outgoing" and the "Contract Roll Weight Incoming," respectively, and together, the "Contract Roll Weights"), determined as further described below.

In respect of an Eligible Commodity c and a Dealing Day d, each of the Contract Roll Weight Incoming" and Contract Roll Weight Outgoing is a number between 0.0 and 1.0, representing the fraction of the weight for that Eligible Commodity given to the Incoming Contract and the Outgoing Contract, respectively, and is calculated by the Long Constituent Calculation Agent in accordance as described below. The sum of the Contract Roll Weight Outgoing and the Contract Roll Weight Incoming is always equal to 1.

#### ***The Contract Roll Weight on any Dealing Day in a Roll Period***

The Contract Roll Weights on each i-th Dealing Day ( $d_i$ ) of the Roll Period for a relevant month (where i is between 1 and 10, inclusive) are determined by the Long Constituent Calculation Agent as follows:

$$CRWI_{d_i}^c = \frac{i}{10}$$

$$CRWO_{d_i}^c = 1 - \frac{i}{10}$$

where:

$CRWI_{d_i}^c$  means the Contract Roll Weight Incoming for Eligible Commodity c and Dealing Day d;

$CRWO_{d_i}^c$  means the Contract Roll Weight Outgoing for Eligible Commodity c and Dealing Day d;  
and

$d_i$  means the i-th Dealing Day of the Roll Period.

*The Contract Roll Weight on any Dealing Day which is not in the Roll Period*

The Contract Roll Weights on each Dealing Day d which is not during the Roll Period for a relevant month are determined by the Long Constituent Calculation Agent as follows:

- (a) In respect of any Dealing Day d of the relevant month prior to the start of the Roll Period for such relevant month, the Contract Roll Weight Incoming is 0.0 and the Contract Roll Weight Outgoing is 1.0.
- (b) In respect of any Dealing Day d of the relevant month following the last Dealing Day of the Roll Period for such relevant month, the Contract Roll Weight Incoming is 1.0 and the Contract Roll Weight Outgoing is 0.0.

For example, because the Roll Period for each Contag Beta Index begins on the first Dealing Day of a relevant month and ends on the third Dealing Day of that month, in the absence of Market Disruptions, the Contract Roll Weights would be as shown as follows:

Dealing Day d of the Relevant Month	Contract Roll Weight Outgoing	Contract Roll Weight Incoming
1 (first Dealing Day of Roll Period)	0.90	0.10
2	0.80	0.20
3	0.70	0.30
4	0.60	0.40
5	0.50	0.50
6	0.40	0.60
7	0.30	0.70
8	0.20	0.80
9	0.10	0.90
10 (the tenth and last Dealing Day of Roll Period)	0.0	1.0
11	0.0	1.0
etcetera	etcetera	etcetera

### ***Adjustment of the roll for Disrupted Days***

If any Dealing Day during the Roll Period is a Disrupted Day (as described under “— Market Disruptions to the Contag Beta Indices”) for either an Incoming Contract or an Outgoing Contract, then the portion of the roll which was scheduled to take place on that Dealing Day for the affected Eligible Commodity will be postponed until the next following Dealing Day which is not a Disrupted Day for either of the Incoming Contract or Outgoing Contract in respect of such Eligible Commodity, irrespective of whether such day is already a day on which a portion of the roll is scheduled to take place.

For example, if the first and second Dealing Days of the relevant month are Disrupted Days for the Eligible Commodity Corn (CBOT); then the Contract Roll Weights for Corn (CBOT) would be as follows:

Dealing Day d of the relevant month	$CRWO_d^c$	$CRWI_d^c$
1 (first Dealing Day of the Roll Period that is a Disrupted Day)	1.0	0.0
2 (Disrupted Day)	1.0	0.0
3	0.70	0.30
4	0.60	0.40
5	0.50	0.50
6	0.40	0.60
7	0.30	0.70
8	0.20	0.80
9	0.10	0.90
10 (the tenth and last Dealing Day of Roll Period)	0.0	1.0
11	0.0	1.0
etcetera	etcetera	etcetera

### ***The Nominal Basket***

The Nominal Basket for each Contag Beta Index is a nominal basket of Futures Contracts representing the synthetic exposure of that Contag Beta Index. A particular composition of the Nominal Basket is associated with each Composition Day, which is the Dealing Day in respect of which the Nominal Basket is composed. Furthermore, a level of the Nominal Basket composed in respect of that Composition Day is associated with each Valuation Day, which is the Dealing Day on which the Nominal Basket is valued, defined as follows:

$$NB_{cd}(vd) = \frac{NCI}{NCO} \sum_c CWO_{cd}^c \times CRWO_{cd}^c \times CPO_{cd}^c(vd) + \sum_c CWI_{cd}^c \times CRWI_{cd}^c \times CPI_{cd}^c(vd)$$

where:

- $NB_{cd} (vd)$  means the level of the Nominal Basket composed in respect of Dealing Day  $cd$  ("Composition Day"), valued as at Dealing Day  $vd$  ("Valuation Day");
- $NCO$  means the Normalizing Constant in respect of the Weights Period including the previous month as at Dealing Day  $cd$ ;
- $NCI$  means the Normalizing Constant in respect of the Weights Period including the current month as at Dealing Day  $cd$ ;
- $c$  means an Eligible Commodity, where the summation sign ( $\sum$ ) indicates summation over all Eligible Commodities;
- $cd$  means the Dealing Day in respect of which the Nominal Basket is composed; and
- $vd$  means the Dealing Day in respect of which the Nominal Basket is valued.

Accordingly, the value of the Nominal Basket in respect of a Dealing Day (the Composition Day) is based on the weighted Contract Price of each Outgoing Contract valued as of the Valuation Day and the weighted Contract Price of each Incoming Contract valued as of the Valuation Day, and is adjusted by the Normalizing Constants.

#### ***The Index Level for each Contag Beta Index***

The Index Level for each Contag Beta Index on the Initial Index Day was 100 (the "Initial Index Level").

The Index Level for each Contag Beta Index is determined in respect of each Dealing Day by reference to the Index Level published in respect of the immediately preceding Dealing Day and the notional return on the exposure of such Contag Beta Index to the relevant Contag Contracts from the close of business on the Relevant Exchanges on the immediately preceding Dealing Day to the close of business on the Relevant Exchanges on such Dealing Day. This notional return is measured by reference to the Contract Prices of the relevant Contag Contracts on such Dealing Days. Where one or more Relevant Exchanges is closed on a Dealing Day, this will constitute a Market Disruption and the Contract Prices of the affected Eligible Commodities will be determined in accordance with "— Market Disruptions to the Contag Beta Indices."

"Relevant Exchange" means, in respect of an Eligible Commodity, the exchange on which such futures contract is listed, or any successor to such exchange.

In respect of each Dealing Day following the Initial Index Day, the Index Level for the Contag Beta Index will be determined by the Long Constituent Calculation Agent, representing the cumulative effect of the Investment Return (as described below) since the Initial Index Day, calculated in accordance with the following formula:

$$Index_d = Index_{d-1} \times (1 + IR_d)$$

where:

- $IR_d$  means the Investment Return for Dealing Day  $d$ , which is determined by the Long Constituent Calculation Agent in accordance with the following formula:

$$IR_d = \frac{NAR_d}{NAI_{d-1}} - 1$$

where:

$NAI_{d-1}$  means the Nominal Amount Invested as at Dealing Day d-1, which is  $NB_{d-1}(d-1)$ , the level of the Nominal Basket composed in respect of Dealing Day d-1, valued as at Dealing Day d-1; and

$NAR_d$  means the Nominal Amount Returned as at Dealing Day d, which is  $NB_{d-1}(d)$ , the level of the Nominal Basket composed in respect of Dealing Day d-1, valued as at Dealing Day d.

### Selection Methodology

The Selection Methodology is an algorithmic methodology developed by JPMSL, which uses the slope of the futures curve of the Eligible Commodities in order to select a particular futures contract in respect of each Eligible Commodity in which to synthetically gain exposure. The Selection Methodology determines, in respect of each relevant month and each Eligible Commodity, the Contag Contract, based on the Contract Prices on the Contract Selection Date. The Selection Methodology may be described as “backwardation-seeking” in that it aims to select a futures contract with the highest level of “backwardation,” based on the Contract Price for a futures contract on the Contract Selection Date compared to the Contract Price for the Closest Dated Preceding futures contract (as defined below), subject to certain constraints, as described in further detail below.

“Backwardation” is used to refer to the situation where commodity futures contracts with a Delivery Month further away in time have lower settlement prices than commodity futures contracts with a Delivery Month closer in time. If plotted on a graph, the curve of the settlement prices of commodity futures contracts would be downward sloping.

The Eligible Commodities used in the Selection Methodology are listed below:

**Table 1: Eligible Commodities**

Eligible Commodity	Relevant Exchange	Deferring Commodity (D) or Non-Deferring Commodity (N)*	Liquid Contract Months
WTI Crude Oil	NYMEX	D	Z
RBOB Gasoline	NYMEX	D	None
Heating Oil	NYMEX	D	M, Z
Natural Gas	NYMEX	D	F, H, J, V
Brent Crude Oil	ICE	D	Z
Gas Oil	ICE	D	M, Z
Gold	COMEX	N	Not Applicable
Silver	COMEX	N	Not Applicable
Aluminium	LME	D	Z
Copper	LME	D	Z
Lead	LME	D	Z
Nickel	LME	D	Z
Zinc	LME	D	Z



Corn	CBOT	D	Z
Soybeans	CBOT	D	X
Wheat	CBOT	D	N, Z
Kansas Wheat	KCBOT	D	N, Z
Cocoa	NYBOT	D	None
Coffee	NYBOT	D	None
Cotton	NYBOT	N	Not Applicable
Sugar	NYBOT	D	H
Feeder Cattle	CME	N	Not Applicable
Lean Hogs	CME	N	Not Applicable
Live Cattle	CME	D	None

\* See “— Eligible Contracts” below.

### ***The Base Set***

In respect of each relevant month and for each Eligible Commodity, only certain Futures Contracts may be considered by the Selection Methodology. These Futures Contracts comprise the “Base Set” and each such Futures Contract in the Base Set is a “Base Contract.”

The Base Set for each relevant month is determined by reference to Table 2 (*Futures Contracts entering into the Base Set*) below.

Each row of Table 1 gives information about an Eligible Commodity. Under the heading “Contract at Month Start” are twelve columns, corresponding (from left to right) to each calendar month from, and including, January to, and including, December. The entries in the columns are single uppercase letters (each a “Contract Letter”). Each Contract Letter relates to a month which is detailed in Table 2 (*Mapping of Contract Letter to Delivery Months*) below and such month is the Delivery Month of a Futures Contract. Reading from left to right in Table 1, the Delivery Month is increasing through the year, so that where the Delivery Month in the columns towards the right of the table moves from a later month e.g., Z (December) to an earlier month e.g. F (January) the Delivery Month refers to that month in the year immediately following the, year in which the relevant month falls.

**Table 2: Futures Contracts entering into the Base Set**

Eligible Commodity (Relevant Exchange)	Contract at Month Start											
	J	F	M	A	M	J	J	A	S	O	N	D
	a	e	a	p	a	u	u	u	e	c	o	e
	n	b	r	r	y	n	l	g	p	t	v	c
WTI Crude Oil (NYMEX)	G	H	J	K	M	N	Q	U	V	X	Z	F
Brent Crude Oil (ICE)	H	J	K	M	N	Q	U	V	X	Z	F	G
Heating Oil (NYMEX)	G	H	J	K	M	N	Q	U	V	X	Z	F
Gas Oil (ICE)	G	H	J	K	M	N	Q	U	V	X	Z	F
RBOB Gasoline (NYMEX)	G	H	J	K	M	N	Q	U	V	X	Z	F
Natural Gas (NYMEX)	G	H	J	K	M	N	Q	U	V	X	Z	F
Wheat (CBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Kansas Wheat (KCBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Soybeans (CBOT)	H	H	K	K	N	N	X	X	X	X	F	F
Corn (CBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Coffee (NYBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Sugar (NYBOT)	H	H	K	K	N	N	V	V	V	H	H	H

Eligible Commodity (Relevant Exchange)	Contract at Month Start											
Cotton (NYBOT)	H	H	K	K	N	N	Z	Z	Z	Z	Z	H
Cocoa (NYBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Aluminium (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Copper (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Lead (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Nickel (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Zinc (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Gold (COMEX)	G	J	J	M	M	Q	Q	Z	Z	Z	Z	G
Silver (COMEX)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Lean Hogs (CME)	G	J	J	M	M	N	Q	V	V	Z	Z	G
Live Cattle (CME)	G	J	J	M	M	Q	Q	V	V	Z	Z	G
Feeder Cattle (CME)	H	H	J	K	Q	Q	Q	U	V	X	F	F

**Table 3: Mapping of Contract Letter to Delivery Months**

Contract Letter	F	G	H	J	K	M	N	Q	U	V	X	Z
Delivery Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

The Base Set in respect of each Eligible Commodity comprises (i) the Futures Contract indicated as the “Contract at Month Start” in Table 2 above for the relevant month, which is the Futures Contract with the earliest Delivery Month in the Base Set, and (ii) each Futures Contract indicated for each subsequent month from, but excluding, the relevant month to, and including, the month falling twelve months after the relevant month.

For example, for the Eligible Commodity WTI Crude Oil (NYMEX) and the relevant month of April 2012, the Base Set consists of the 13 Futures Contracts with Delivery Months of May 2012 (the Contract at Month Start for the relevant month), June 2012, July 2012, August 2012, September 2012, October 2012, November 2012, December 2012, January 2013, February 2013, March 2013, April 2013 and May 2013.

Although the Base Set considers the Futures Contracts for the thirteen calendar months from and including the relevant month to and including the month falling twelve months after the relevant month, the number of Base Contracts in the Base Set may be less than thirteen (as in the example below). The number of Base Contracts in the Base Set can be determined by considering the number of different Contract Letters in the row relevant to an Eligible Commodity in Table 2 (*Futures Contracts entering into the Base Set*) above.

For example, for the Eligible Commodity Corn (CBOT) and the relevant month of April 2012, the Base Set consists of the six Futures Contracts with Delivery Months of May 2012 (the Contract at Month Start for the relevant month), July 2012, September 2012, December 2012, March 2013 and May 2013.

The Base Contracts contained in the Base Set is enumerated from 1 (the nearest-dated Base Contract in the Base Set) to  $i$  (the farthest-dated Base Contract in the Base Set) where  $i$  is the size of the Base Set. In the first example above, the May 2012 Base Contract is numbered 1 and the May 2013 Base Contract is numbered 13. In the second example above, the May 2012 Base Contract is numbered 1 and the May 2013 Base Contract is numbered 6.

### ***Eligible Contracts***

Once the Base Set in respect of an Eligible Commodity is determined, the Long Constituent Calculation Agent will then determine a sub-set of the Base Set (the "Eligible Set") by classifying each Eligible Commodity as either a "Deferring Commodity" or a "Non-Deferring Commodity," as specified in Table 1 (*Eligible Commodities*) above, based on the characteristics of such commodity. Each Futures Contract which is a member of such the Eligible Set is an "Eligible Contract."

In respect of Deferring Commodities, the Base Contracts with a Delivery Month:

- (a) not earlier than the second Base Contract in the Base Set ( $F_2$ ); and
- (b) (1) not more than six months following the relevant month; or  
(2) more than six months following the relevant month and included in the list of Liquid Contract Months for the Eligible Commodity as specified in Table 1 (*Eligible Commodities*) above,

will be the Eligible Contracts in the Eligible Set.

In respect of Non-Deferring Commodities, the Contract at Month Start for the month immediately following the relevant month will be the only Eligible Contract in the Eligible Set.

### ***Choice of Contag Contract: Selecting the Most Backwardated Contract for the relevant Eligible Commodity***

In the Selection Methodology, the term "Local Backwardation" is used as a measure of the degree of backwardation for the  $i^{\text{th}}$  Base Contract ( $F_i$ ) in the Base Set compared to the preceding Base Contract ( $F_{i-1}$ ) in the Base Set (the "Closest Dated Preceding Futures Contract"). In respect of each Eligible Commodity, the Local Backwardation is calculated for each Eligible Contract in the Eligible Set. When determining the Local Backwardation for an Eligible Contract, the Closest Dated Preceding Futures Contract in relation to such Eligible Contract is the Base Contract immediately preceding the Eligible Contract in the Base Set.

Subject to the occurrence of a Market Disruption and in respect of a relevant month, the Long Constituent Calculation Agent determines the Local Backwardation in respect of each Base Contract in the Base Set ( $F_i$ ) in accordance with the following formula:

$$Local\ Backwardation(F_i) = \frac{1}{m} \left( \frac{Level(F_{i-1})}{Level(F_i)} - 1 \right)$$

where:

$Level(F_i)$  means the Contract Price of the  $i^{\text{th}}$  Base Contract in the Base Set ( $F_i$ ) on the Contract Selection Date in respect of the relevant month;

$Level(F_{i-1})$  means the Contract Price of the  $(i-1)^{\text{th}}$  Base Contract in the Base Set ( $F_{i-1}$ ) on the Contract Selection Date in respect of the relevant month; and

$m$  means the number of calendar months from and including the Delivery Month of  $F_{i-1}$  to but excluding the Delivery Month of  $F_i$ . If the Delivery Months of  $F_{i-1}$  and  $F_i$  are consecutive,  $m$  will be 1.

Local Backwardation cannot be determined for the first Base Contract in a Base Set ( $F_1$ ) since there is no Closest Dated Preceding Futures Contract in respect of Base Set ( $F_1$ ).

The Eligible Contract with the highest Local Backwardation will be the “Most Backwardated Contract” for the relevant Eligible Commodity (subject to certain limitations). If there is no futures contract for one or more Eligible Commodities with backwardation, the Selection Methodology will select the futures contract with the lowest level of contango for any such commodities.

### ***Changing the Contag Contract: the “Significant Benefit Test”***

In cases where the Contag Contract for an Eligible Commodity for the month immediately preceding the relevant month (the “Previously Selected Contract”) is also an Eligible Contract in the Eligible Set for the relevant month, the Long Constituent Calculation Agent will apply the Significant Benefit Test to determine if the Contag Contract should change from the prior month to the next relevant month. Under the Significant Benefit Test, the Contag Contract will change only where the increase in Local Backwardation with respect to the relevant Eligible Commodity by changing the exposure of the Contag Beta Index to the Most Backwardated Contract significantly increases the Local Backwardation with respect to the relevant Eligible Commodity.

The Significant Benefit Test is considered to be passed if either:

- (a)  $F_{PS}$  is not in the Eligible Set; or
- (b) the following inequality is true:

$$Local\ Backwardation(F_{MB}) > Local\ Backwardation(F_{PS}) + SBT$$

where:

$F_{PS}$  means the Previously Selected Contract;

$F_{MB}$  means the Most Backwardated Contract;

$SBT$  means the “Significant Benefit Threshold” and is equal to 0.005.

If the Significant Benefit Test is passed, the Contag Contract for the relevant month will be the Most Backwardated Contract; otherwise it will be the Previously Selected Contract. In addition, if the Previously Selected Contract and the Most Backwardated Contract are the same Futures Contract, the Significant Benefit Test will fail and the Contag Contract for the prior month will remain as the Contact Contract for the relevant month.

### ***Market Disruptions / Disrupted Days***

If, on any Contract Selection Date, any of the conditions (a) to (c) below apply to a Futures Contract due to comprise the Base Set, then such day will be regarded as a “Long Constituent Disrupted Day” in respect of that Futures Contract and this will constitute a Market Disruption for such Futures Contract:

- (a) such Contract Selection Date is not a Contract Business Day with respect to such Futures Contract;
- (b) the Contract Price of such Futures Contract on such Contract Selection Date is a Limit Price;
- (c) no Contract Price is available for the Futures Contract on such Contract Selection Date.

If a Market Disruption exists in respect of a Futures Contract, the Selection Methodology will be adjusted by the Long Constituent Calculation Agent as follows:

- (i) in the case of (a) and (c) above, the Selection Methodology will treat the Contract Price for such Contract Selection Date as being equal to the Contract Price for the relevant Futures Contract which was available on the Dealing Day immediately preceding the Contract Selection Date and on which no Market Disruption occurred. If no such Contract Price exists, then that particular Futures Contract will be excluded from the Base Set and the Selection Methodology will otherwise remain unaltered; or
- (ii) in the case of (b) above, the Selection Methodology will not be modified and the Contract Price for such Contract Selection Date will be the Limit Price.

“Contract Business Day” means, in relation to an Eligible Commodity and a Futures Contract, a day on which the Relevant Exchange for such Eligible Commodity is scheduled to be open for trading for its regular trading sessions and to publish a settlement price.

“Limit Price” means, in relation to a Dealing Day and a Contract Price, the maximum or minimum price allowed for that Futures Contract by the Relevant Exchange on such day.

## **Changes to the Relevant Eligible Commodities**

### ***Amendment to the Relevant Eligible Commodities***

In the event that a Designated Contract is added to or removed from the calculation of the S&P GSCI™ Index or the S&P GSCI™ Light Energy Index (each, an “S&P GSCI Family- Index”), each of which determine the Commodity Weight of the applicable Eligible Commodity in the J.P. Morgan Contag Beta Full Energy Excess Return Index and the J.P. Morgan Contag Beta Light Energy Excess Return Index, respectively, corresponding changes will be made by the Long Constituent Sponsor to the Eligible Commodities that correspond to the Designated Contracts used in the calculation of the relevant S&P GSCI Family-Index (the “Relevant Eligible Commodities”) contained in the relevant Contag Beta Index. Such amendments will be published by the Long Constituent Sponsor and will be effective for the Weights Period corresponding to the S&P GSCI Period in respect of which such Designated Contract is added or removed from the calculation of the relevant S&P GSCI Family-Index.

### ***Addition of Eligible Commodities***

In the event that a Designated Contract is added to the calculation of either the S&P GSCI™ Index or the S&P GSCI™ Light Energy Index that is not currently in the set of Eligible Commodities, such Designated Contract (the “New Eligible Commodity”) will be considered an Eligible Commodity for the purposes of calculating the relevant Contag Beta Index, effective as of the Weights Period corresponding to the S&P GSCI Period for which the addition is set to take effect in the S&P GSCI™ Index or the S&P GSCI™ Light Energy Index, as applicable. All details relating to such New Eligible Commodity necessary for the purposes of carrying out the Selection Methodology (for example, the Liquid Contract Months) will be published by the Long Constituent Sponsor.

## **Modifications to, or Cancellation of, the S&P GSCI Family-Index**

If either the S&P GSCI Family-Index is (a) not calculated and announced by the S&P GSCI Index Sponsor, but is calculated and announced by a successor sponsor acceptable to the Long Constituent Sponsor, or (b) replaced by a successor index using, in the determination of the Long Constituent Sponsor, the same or substantially similar formula for and method of calculation as used in the calculation of such S&P GSCI Family-Index, then such index will be deemed to be the index so calculated and announced by that successor index sponsor or that successor index, as the case may be.

If, on or prior to any Dealing Day on which the Long Constituent Calculation Agent is determining the Index Level of either of the Contag Beta Indices, the S&P GSCI Index Sponsor makes a material change in the formula for or the method of calculating the relevant S&P GSCI Family-Index (other than a modification prescribed in that formula or method to maintain such index in the S&P GSCI Family-Index or prescribed routine events) that affects the ability of the Long Constituent Calculation Agent to define the Commodity Weights or Weights Periods or any externally specified particular in respect of either of the Contag Beta Indices, then the Long Constituent Sponsor will, in good faith, make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, externally specified particular, specified inputs or any other rule in relation to the Contag Beta Indices to account for such modification.

If, on or prior to any Dealing Day on which the Long Constituent Calculation Agent is determining the Index Level of either of the Contag Beta Indices, the S&P GSCI Index Sponsor permanently cancels either S&P GSCI Family-Index, and no successor index exists, the Long Constituent Sponsor will, in good faith, either:

- (a) ensure that the Long Constituent Calculation Agent continues to calculate the Index Level of the relevant Contag Beta Index using the latest available Commodity Weights or Weights Periods or externally specified particulars at the time the S&P GSCI Family-Index was cancelled; or
- (b) make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, valuation terms or any other rule in relation to the Contag Beta Indices to account for such cancellation.

#### **Publication of the Index Level**

The Long Constituent Calculation Agent may calculate the Contag Beta Index levels with greater frequency than daily on each Dealing Day and share this calculation with its affiliates for internal purposes.

The Long Constituent Calculation Agent will be under no obligation to any person to provide the Contag Beta Index levels by any alternative method if publication of the relevant Bloomberg ticker identified in the table above is subject to any delay in or interruptions of publication or any act of God, act of governmental authority, or act of public enemy, or due to war, the outbreak or escalation of hostilities, fire, flood, civil commotion, insurrection, labor difficulty including, without limitation, any strike, other work stoppage, or slow-down, severe or adverse weather conditions, power failure, communications line or other technological failure that may occur or any other event beyond the control of the Long Constituent Calculation Agent.

The Long Constituent Calculation Agent is under no obligation to continue the calculation, publication and dissemination of any of the Contag Beta Indices or any Index Level.

#### **Market Disruptions to the Contag Beta Indices**

If there is a Market Disruption on any Dealing Day:

- (a) during a Roll Period, the portion of the roll which was scheduled to take place on such Dealing Day will be postponed as described above under “— Calculation and Publication of the Contag Beta Index Level — Adjustment of the roll for Disrupted Days”; or
- (b) on which the Nominal Basket or the Normalizing Constant is determined, the Long Constituent Calculation Agent will calculate the Nominal Basket or the Normalizing Constant, as applicable by (i) taking all published Contract Prices in respect of the Dealing Day in question and (ii) using the most recently published Contract Prices for those Futures Contracts for which no Contract Price is published by the Relevant Exchange on such day.

## Extraordinary Events

### *Successor Futures Contract*

If any Futures Contract is:

- (a) not quoted by the Relevant Exchange but by a successor exchange acceptable to the Long Constituent Calculation Agent; or
- (b) replaced by a successor futures contract referencing, in the determination of the Long Constituent Calculation Agent, a substantially similar commodity as used in the relevant Futures Contract,

then, in each case, the successor futures contract (the "Successor Futures Contract") shall replace the relevant Futures Contract and the Calculation Agent shall determine in good faith the adjustments to the Contag Beta Rules, as it determines appropriate, to account for such change.

### *Change in Law/Inaccurate Contract Prices*

Without prejudice to the ability of the Long Constituent Sponsor to amend the Contag Beta Rules, the Long Constituent Calculation Agent may, acting in good faith and in a commercially reasonable manner:

- (a) exclude; or
- (b) substitute,

any Futures Contract following the occurrence (and/or continuation) of a Change in Law or in circumstances where it considers it reasonably necessary to do so to reflect the intention of the Contag Beta Indices, including (without prejudice to the generality of the foregoing) any perception among market participants generally that the published price of the relevant Futures Contract is inaccurate (and the Relevant Exchange fails to correct such level), and if it so excludes or substitutes any Futures Contract, then the Long Constituent Calculation Agent may adjust the Contag Beta Rules as it determines in good faith to be appropriate to account for such exclusion or substitution on such date(s) selected by the Long Constituent Calculation Agent. The Long Constituent Calculation Agent is under no obligation to continue the calculation and publication of any Contag Beta Index upon the occurrence or existence of a Change in Law; and the Long Constituent Calculation Agent or the Long Constituent Sponsor may decide to cancel any Contag Beta Indices if they determine, acting in good faith, that the objective of the relevant Contag Beta Indices can no longer be achieved.

For purposes of the paragraph above, "Change in Law" means:

- (a) due to:
  - (i) the adoption of, or any change in, any applicable law, regulation, rule or order (including, without limitation, any tax law); or
  - (ii) the promulgation of, or any change in, the interpretation, application, exercise or operation by any court, tribunal, regulatory authority, exchange or trading facility or any other relevant entity with competent jurisdiction of any applicable law, rule, regulation, order, decision or determination (including, without limitation, as implemented by the CFTC or exchange or trading facility), in each case occurring on or after the Initial Index Day,

in each case, the Long Constituent Calculation Agent determines in good faith that it is contrary (or, upon adoption, it will be contrary) to such law, rule, regulation, order, decision or determination for any market participants that are brokers or financial intermediaries (individually or collectively) to purchase, sell, enter into, maintain, hold, acquire or dispose of any Futures Contracts or any transaction referencing any Futures Contract (in whole or in part) (in the aggregate on a portfolio basis or incrementally on a trade by trade basis) including (without limitation) if such Futures Contract (in whole or in part) are (or, but for the consequent disposal thereof, would otherwise be) in excess of any allowable position limit(s) applicable to any market participants that are brokers or financial intermediaries (individually or collectively) in relation to any Futures Contract traded on any exchange(s) or other trading facility; or

(b) the occurrence or existence of any:

- (i) suspension or limitation imposed on trading commodity futures contracts (including, without limitation the Futures Contracts); or
- (ii) any other event that causes trading in commodity futures contracts (including, without limitation Futures Contracts) to cease.

*Material change to Futures Contract, cancellation or non-publication*

If, at any time, any Relevant Exchange:

- (a) announces that it will make a material change to any Futures Contract or in any other way materially modifies such contract (other than a modification prescribed in the definition of such contract); or
- (b) (i) permanently cancels any Futures Contract and no Successor Futures Contract exists or (ii) is otherwise unable or unwilling to publish levels of the Futures Contract,

then the Long Constituent Calculation Agent may remove such futures contract from the Contag Beta Indices and may adjust the Contag Beta Rules as it determines in good faith to be appropriate to account for such change(s) (including, without limitation, selecting a replacement underlying futures contract traded on an equivalent exchange and having similar characteristics to the affected Futures Contract) on such date(s) as selected by the Long Constituent Calculation Agent.

**Corrections**

In the event that (a) the Contract Price of any Futures Contract used to calculate the Index Level in respect of any Dealing Day is subsequently corrected and the correction is published by the Relevant Exchange before the next following Roll Period or (b) the Long Constituent Calculation Agent identifies an error or omission in any of its calculations or determinations in respect of the Contag Beta Indices, then the Long Constituent Calculation Agent may, if practicable and the correction is deemed material by the Long Constituent Sponsor, adjust or correct the Index Level published in respect of the relevant Dealing Day and each subsequent Dealing Day and publish such corrected Index Level(s) as soon as reasonably practicable.

**Long Constituent Sponsor; Long Constituent Calculation Agent; Amendment of Rules; Limitation of Liability**

The Long Constituent Calculation Agent is appointed by the Long Constituent Sponsor to calculate and maintain the Contag Beta Indices from and until such time that the Long Constituent Sponsor terminates its relationship with the current Long Constituent Calculation Agent and appoints a successor index calculation agent.



The Long Constituent Sponsor will maintain all ownership rights, expressed or otherwise, with respect to the Contag Beta Indices, including the ability to license, sell or transfer any or all of its ownership rights with respect to any Contag Beta Index, including but not limited to terminating and appointing any successor index calculation agent.

The Contag Beta Rules provide that the Long Constituent Sponsor must act in good faith and in a commercially reasonable manner. In the event that ambiguities arise in interpreting or applying the Contag Beta Rules, the Long Constituent Calculation Agent and the Long Constituent Sponsor will resolve ambiguities in a reasonable manner and, if necessary, the Long Constituent Sponsor will amend the Contag Beta Rules to reflect such resolution.

None of the Long Constituent Sponsor, the Long Constituent Calculation Agent and their respective affiliates and subsidiaries and none of their respective directors, officers, employees, delegates and agents (each, a "Relevant Person") will have any responsibility to any person (whether as a result of negligence or otherwise) for any determinations made or anything done (or omitted to be determined or done) in respect of the Contag Beta Indices or in respect of the publication of the Index Level (or failure to publish such Index Level) and any use to which any person may put the Contag Beta Indices or the Index Levels.

None of the Long Constituent Sponsor, the Long Constituent Calculation Agent and any Relevant Person will have any liability, contingent or otherwise, to any person or entity for the quality, accuracy, timeliness or completeness of the information or data contained in the Contag Beta Rules or the Contag Beta Indices, or for delays, omissions or interruptions in the delivery of the Contag Beta Indices or related data. None of the Long Constituent Sponsor, the Long Constituent Calculation Agent and any Relevant Person makes any warranty, express or implied, as to the results to be obtained by any person or entity in connection with any use of the Contag Beta Indices, including but not limited to the trading of or investments in products based on or indexed or otherwise related to the Contag Beta Indices, any data related thereto or any components thereof.

None of the Long Constituent Sponsor, the Long Constituent Calculation Agent and any Relevant Person makes any express or implied warranties, and hereby expressly disclaims, to the fullest extent permitted by law, all warranties of merchantability or fitness for a particular purpose or use with respect to the Contag Beta Rules, the Contag Beta Indices or any data related thereto. Without limiting any of the foregoing, in no event will any of the Long Constituent Sponsor, the Long Constituent Calculation Agent and any Relevant Person have any liability for any special, punitive, indirect or consequential damages (including lost profits), in connection with any use by any person of the Contag Beta Indices or any products based on or indexed or otherwise related thereto, even if notified of the possibility of such damages.

All determinations of the Long Constituent Calculation Agent in respect of the Contag Beta Indices will be final, conclusive and binding, and no person will be entitled to make any claim against any of the Relevant Persons in respect thereof. Once a determination or calculation is made or action taken by the Long Constituent Calculation Agent, the Long Constituent Sponsor or any other Relevant Person in respect of the Contag Beta Indices, none of the Long Constituent Sponsor, the Long Constituent Calculation Agent and any Relevant Person will be under any obligation to revise any determination or calculation made or action taken for any reason.

### **The Commodity Futures Markets**

Contracts on physical commodities are traded on regulated futures exchanges, in the over-the-counter market and on various types of physical and electronic trading facilities and markets. As of the date of this underlying supplement, all of the contracts included in the Contag Beta Indices are exchange-traded futures contracts. An exchange-traded futures contract is a bilateral agreement providing for the purchase and sale of a specified type and quantity of a commodity or financial instrument during a stated delivery month for a fixed price. A futures contract on an index of

commodities typically provides for the payment and receipt of a cash settlement based on the value of such commodities. A futures contract provides for a specified settlement month in which the commodity or financial instrument is to be delivered by the seller (whose position is described as "short") and acquired by the purchaser (whose position is described as "long") or in which the cash settlement amount is to be made.

There is no purchase price paid or received on the purchase or sale of a futures contract. Instead, an amount of cash or cash equivalents must be deposited with the broker as "initial margin." This amount varies based on the requirements imposed by the exchange clearing houses, but may be as low as 5% or less of the value of the contract. This margin deposit provides collateral for the obligations of the parties to the futures contract.

By depositing margin in the most advantageous form (which may vary depending on the exchange, clearing house or broker involved), a market participant may be able to earn interest on its margin funds, thereby increasing the potential total return that may be realized from an investment in futures contracts. The market participant normally makes to, and receives from, the broker subsequent payments on a daily basis as the price of the futures contract fluctuates. These payments are called "variation margin" and make the existing positions in the futures contract more or less valuable, a process known as "marking to market."

Futures contracts are traded on organized exchanges, known as "contract markets" in the United States, through the facilities of a centralized clearing house and a brokerage firm which is a member of the clearing house. The clearing house guarantees the performance of each clearing member which is a party to the futures contract by, in effect, taking the opposite side of the transaction. At any time prior to the expiration of a futures contract, subject to the availability of a liquid secondary market, a trader may elect to close out its position by taking an opposite position on the exchange on which the trader obtained the position. This operates to terminate the position and fix the trader's profit or loss.

U.S. contract markets, as well as brokers and market participants, are subject to regulation by the Commodity Futures Trading Commission. Futures markets outside the United States are generally subject to regulation by comparable regulatory authorities. However, the structure and nature of trading on non-U.S. exchanges may differ from the foregoing description. From their inception to the present, the Contag Beta Indices have been composed exclusively of futures contracts traded on regulated exchanges.

**BACKGROUND ON THE SHORT CONSTITUENTS — THE S&P GSCI™ INDEX EXCESS RETURN AND THE S&P GSCI™ LIGHT ENERGY INDEX EXCESS RETURN**

Please see the descriptions of the S&P GSCI™ Index Excess Return and the S&P GSCI™ Light Energy Index Excess Return in the accompanying product supplement or another accompanying underlying supplement for information about the S&P GSCI™ Index Excess Return and the S&P GSCI™ Light Energy Index Excess Return.

## Annex A

# J.P. Morgan Contag Module A: Selection Methodology

August 2009

**J.P.Morgan**

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## 1. Contag

Contag refers to a methodology for selecting Futures Contracts (the “Selection Methodology”) and several strategies developed by J.P. Morgan (the “Contag Indices”) that utilise this methodology. The Selection Methodology uses the slope of the futures curve of certain specified commodities in order to select a particular Futures Contract in respect of each commodity in which to synthetically gain exposure. The Selection Methodology aims to select a Futures Contract with the highest level of Local Backwardation subject to certain constraints, all as further explained in more detail below.

## 2. This Document

This document, Module A (*Selection Methodology*), explains the Selection Methodology. By itself this document does not define an index or product. The Selection Methodology will result in the determination of a Futures Contract for each Eligible Commodity (the “Contag Contract”) in which the relevant Contag Index will have synthetic exposure over the following month.

The determination of the level of a Contag Index will depend, amongst other things, on the selection of the Contag Contracts according to the Selection Methodology. Further modules will be used to describe other concepts or details of the Contag Indices and or modify concepts or details described herein for the purposes of a particular Contag Index. One or more of these modules should be read in conjunction with this document to obtain the full rules of the relevant Contag Index.

## 3. Definitions

Capitalised terms used in this document should be interpreted according to the definitions given below. In many cases there is a further explanation of the term or concept in the body of this document.

Base Contract	means, in relation to an Eligible Commodity and a Relevant Month, a Futures Contract which is a member of the Base Set.
Base Set	means, in relation to an Eligible Commodity and a Relevant Month, a set of Futures Contracts which enter into the Selection Methodology for the determination of the Contag Contract.
Closest Dated Preceding Futures Contract	means, in relation to a Base Set and the $i^{\text{th}}$ Base Contract of the Base Set, the $(i-1)^{\text{th}}$ Base Contract.
Contag Contract	means, in relation to an Eligible Commodity and a Relevant Month, the Futures Contract selected by the Selection Methodology.
Contag Index or Contag Indices	means a family of commodity based strategies developed by J.P. Morgan that are dependent on the Selection Methodology.
Contract at Month Start	means, in relation to an Eligible Commodity and a Relevant Month, the Futures Contract with the earliest Delivery Month in the Base Set.
Contract Business Day	means, in relation to an Eligible Commodity and a Futures Contract, a day on which the Relevant Exchange for such Eligible Commodity is scheduled to be open for trading for its regular trading sessions and to publish a settlement price.

Contract Letter	means each letter listed in Table 2: <i>Mapping of Contract Letter to Delivery Months</i> ), denoting the Delivery Month of a Futures Contract.
Contract Price	means, in relation to a Futures Contract and a Dealing Day, the settlement price in USD of such Futures Contract as published by the Relevant Exchange for such Dealing Day.
Contract Selection Date	means, in relation to each Relevant Month, the Dealing Day for which Contract Prices are observed in the Selection Methodology as specified in Section 4.1 ( <i>General</i> ) below.
Dealing Day	means a day on which the NYSE Euronext is scheduled to be open for trading for its regular trading session.
Deferring Commodities	means the Eligible Commodities set out as a Deferring Commodity in Table 3 ( <i>Eligible Commodities</i> ).
Delivery Month	means, in relation to a Futures Contract, the month in which such Futures Contract is due to expire, settle or be delivered as specified by the Relevant Exchange.
Disrupted Day	has the meaning given to it in Section 5 ( <i>Market Disruption</i> ) below.
Eligible Commodity	means each commodity listed on the Related Exchange specified in Table 3: <i>Eligible Commodities</i> ) below.
Eligible Contract	means, in relation to an Eligible Commodity and a Relevant Month, a Futures Contract which is eligible to be selected as the Contag Contract as determined in Section 4.4 ( <i>Eligible Contracts</i> ) below.
Eligible Set	means, in relation to an Eligible Commodity and a Relevant Month, a set of Eligible Contracts.
Futures Contract	means a contract for delivery of an Eligible Commodity which is associated with a Delivery Month.
Index Calculation Agent	means J.P. Morgan Securities Ltd. or any affiliate or subsidiary designated by it to act as calculation agent in connection with the Selection Methodology.
J.P. Morgan	means J.P. Morgan Securities Ltd., any affiliate, subsidiary of nominated successor thereof.
Limit Price	means, in relation to a Dealing Day and a Contract Price, the maximum or minimum price allowed for that Futures Contract by the Relevant Exchange on such day.
Liquid Contract Months	means, in relation to an Eligible Commodity that is a Deferring Commodity, the Futures Contracts listed as such in Table 3: <i>Eligible Commodities</i> ).
Local Backwardation	means, in respect of a Futures Contract ( $F_i$ ), a measure of the degree of backwardation between $F_i$ and the Closest Dated Preceding Futures Contract ( $F_{i-1}$ ) as further defined in Section 4.2 ( <i>Local Backwardation</i> ) below.

Market Disruption	means the occurrence of a Disrupted Day, as described in Section 5 ( <i>Market Disruptions</i> ) below.
Most Backwardated Contract	means, in relation to an Eligible Set, the Eligible Contract with the highest Local Backwardation.
Non-Deferring Commodity	means an Eligible Commodity which is not a Deferring Commodity as set out in Table 3 ( <i>Eligible Commodities</i> ) below.
Previously Selected Contract	means, in relation to a Relevant Month and an Eligible Commodity, the Contag Contract for such Eligible Commodity for the month immediately preceding the Relevant Month.
Relevant Exchange	means, in respect of an Eligible Commodity, the exchange on which such Futures Contract is listed as specified in Table 3 ( <i>Eligible Commodities</i> ), or any successor to such exchange.
Relevant Month	means the calendar month in respect of which the Selection Methodology is determining the Contag Contracts.
Selection Methodology	means the algorithmic process described in this document for the selection of Contag Contracts.
Significant Benefit Test	means the test set out in Section 4.5.3 ( <i>Significant Benefit Test</i> ) to decide if the Most Backwardated Contract shall be the Contag Contract.

## 4. Methodology

### 4.1 General

The Selection Methodology is an algorithmic process which determines, in respect of each calendar month (the “Relevant Month”) and each Eligible Commodity, the Contag Contract. The Contag Contract is selected from the Eligible Contracts in respect of such Eligible Commodity for such Relevant Month. This selection is based on Contract Prices for the last Dealing Day of the calendar month immediately preceding the Relevant Month (the “Contract Selection Date” for the Relevant Month).

The Selection Methodology may be described as “backwardation-seeking”. The methodology aims (subject to various constraints) to select the Futures Contract which has the highest Local Backwardation based on the Contract Price for a Futures Contract on the Contract Selection Date compared to the Contract Price for the Closest Dated Preceding Futures Contract.

### 4.2 Local Backwardation

When looking at the Contract Prices of Futures Contracts in relation to an Eligible Commodity the term “backwardation” is used to refer to the situation where Futures Contracts with a Delivery Month further in time have lower Contract Prices than Futures Contracts with a Delivery Month closer in time. If plotted on a graph the curve of the Contract Prices of the Futures Contracts of an Eligible Commodity would be downsloping.

In the Selection Methodology the term Local Backwardation is used as a measure of the degree of backwardation for the  $i^{\text{th}}$  Base Contract ( $F_i$ ) in the Base Set compared to the preceding Base Contract ( $F_{i-1}$ ) in the Base Set (the “Closest Dated Preceding Futures Contract”).

Subject to the occurrence of a Market Disruption and in respect of a Relevant Month, Local Backwardation in respect of the  $i^{\text{th}}$  Base Contract in the Base Set ( $F_i$ ) is determined by the Index Calculation Agent in accordance with the following formula:

$$\text{Local Backwardation}(F_i) = \frac{1}{m} \left( \frac{\text{Level}(F_{i-1})}{\text{Level}(F_i)} - 1 \right)$$

where:

$\text{Level}(F_i)$  means the Contract Price of the  $i^{\text{th}}$  Base Contract in the Base Set ( $F_i$ ) on the Contract Selection Date in respect of the Relevant Month;

$\text{Level}(F_{i-1})$  means the Contract Price of the  $(i-1)^{\text{th}}$  Base Contract in the Base Set ( $F_{i-1}$ ) on the Contract Selection Date in respect of the Relevant Month; and

$m$  means the number of calendar months from and including the Delivery Month of  $F_{i-1}$  to but excluding the Delivery Month of  $F_i$ . If the Delivery Months of  $F_{i-1}$  and  $F_i$  are consecutive,  $m$  shall be 1.

Local Backwardation cannot be determined for the first Base Contract in a Base Set ( $F_1$ ) since there is no Closest Dated Preceding Futures Contract in the Base Set.

### 4.3 The Base Set

In respect of each Relevant Month and for each Eligible Commodity, only certain Futures Contracts may be considered by the Selection Methodology. These Futures Contracts comprise the Base Set and each such Futures Contract in the Base Set is a Base Contract.

The Base Set shall be determined by reference to Table 1 (*Futures Contracts entering into the Base Set*) below.

Each row of Table 1 gives information about an Eligible Commodity. Under the heading “Contract at Month Start” are 12 columns, corresponding (from left to right) to each calendar month from, and including, January to, and including, December. The entries in the columns are single uppercase letters (each a “Contract Letter”). Each Contract Letter relates to a month which is detailed in Table 2 (*Mapping of Contract Letter to Delivery Months*) below and such month is the Delivery Month of a Futures Contract. Reading from left to right in Table 1 the Delivery Month is increasing through the year, so that where the Delivery Month in the columns towards the right of the table moves from a later month e.g. Z (December) to an earlier month e.g. F (January) the Delivery Month refers to that month in the year immediately following the year in which the Relevant Month falls.



Eligible Commodity (Relevant Exchange)	Contract at Month Start											
	J a n	F e b	M a r	A p r	M a y	J u n	J u l	A u g	S e p	O c t	N o v	D e c
WTI Crude Oil (NYMEX)	G	H	J	K	M	N	Q	U	V	X	Z	F
Brent Crude Oil (ICE)	H	J	K	M	N	Q	U	V	X	Z	F	G
Heating Oil (NYMEX)	G	H	J	K	M	N	Q	U	V	X	Z	F
Gas Oil (ICE)	G	H	J	K	M	N	Q	U	V	X	Z	F
RBOB Gasoline (NYMEX)	G	H	J	K	M	N	Q	U	V	X	Z	F
Natural Gas (NYMEX)	G	H	J	K	M	N	Q	U	V	X	Z	F
Wheat (CBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Kansas Wheat (KCBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Soybeans (CBOT)	H	H	K	K	N	N	X	X	X	X	F	F
Corn (CBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Coffee (NYBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Sugar (NYBOT)	H	H	K	K	N	N	V	V	V	H	H	H
Cotton (NYBOT)	H	H	K	K	N	N	Z	Z	Z	Z	Z	H
Cocoa (NYBOT)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Aluminium (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Copper (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Lead (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Nickel (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Zinc (LME)	G	H	J	K	M	N	Q	U	V	X	Z	F
Gold (COMEX)	G	J	J	M	M	Q	Q	Z	Z	Z	Z	G
Silver (COMEX)	H	H	K	K	N	N	U	U	Z	Z	Z	H
Lean Hogs (CME)	G	J	J	M	M	N	Q	V	V	Z	Z	G
Live Cattle (CME)	G	J	J	M	M	Q	Q	V	V	Z	Z	G
Feeder Cattle (CME)	H	H	J	K	Q	Q	Q	U	V	X	F	F

**Table 1: Futures Contracts entering into the Base Set**

Contract Letter	F	G	H	J	K	M	N	Q	U	V	X	Z
Delivery Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

**Table 2: Mapping of Contract Letter to Delivery Months**

The Base Set in respect of each Eligible Commodity shall comprise (i) the Futures Contract indicated as the “Contract at Month Start” in Table 1 above for the Relevant Month and (ii) each Futures Contract indicated for each subsequent month from, but excluding, the Relevant Month to, and including, the month falling 12 months after the Relevant Month.

Example 1: for the Eligible Commodity WTI Crude Oil (NYMEX) and the Relevant Month of January 2009, the Base Set shall consist of the 13 Futures Contracts with Delivery Months of February 2009 (the Contract at Month Start for the Relevant Month), March 2009, April 2009, May 2009, June 2009, July 2009, August 2009, September 2009, October 2009, November 2009, December 2009, January 2010 and February 2010.

Although the Base Set considers the Futures Contracts for the 13 calendar months from and including the Relevant Month to and including the month falling 12 months after the Relevant Month, the number of Base Contracts in the Base Set may be less than 13 (as in Example 2 below). The number of Base Contracts in the Base Set can be determined by considering the number of different Contract Letters in the row relevant to an Eligible Commodity in Table 1 (*Futures Contracts entering into the Base Set*) above.

Example 2: for the Eligible Commodity Corn (CBOT) and the Relevant Month of January 2009, the Base Set shall consist of the 6 Futures Contracts with Delivery Months of March 2009 (the Contract at Month Start for the Relevant Month), May 2009, July 2009, September 2009, December 2009 and March 2010.

The Base Contracts contained in the Base Set shall be enumerated from 1 (the nearest-dated Base Contract in the Base Set) to  $i$  (the farthest-dated Base Contract in the Base Set) where  $i$  is the size of the Base Set. In Example 1 above, the February 2009 Base Contract shall be numbered 1 and the February 2010 Base Contract shall be numbered 13. In Example 2 above, the March 2009 Base Contract shall be numbered 1 and the March 2010 Base Contract shall be numbered 6.

#### 4.4 Eligible Contracts

Once the Base Set in respect of an Eligible Commodity is determined the Index Calculation Agent will then determine a subset of the Base Set called the Eligible Set in accordance with the paragraph 4.4.1 (*Deferring Commodity*) below. Each Futures Contract which is a member of such subset is an Eligible Contract.

##### 4.4.1 Deferring Commodity

Each Eligible Commodity is classified as either a Deferring Commodity or a Non-Deferring Commodity as specified in Table 3 (*Eligible Commodities*) below.

In respect of Non-Deferring Commodities, the Contract at Month Start for the month immediately following the Relevant Month shall be the only Eligible Contract in the Eligible.

In respect of Deferring Commodities, the Eligible Contracts are the Base Contracts with a Delivery Month:

- (1) not earlier than the second Base Contract in the Base Set ( $F_2$ ); and
- (2) not more than 6 months following the Relevant Month; and
- (3) more than 6 months following the Relevant Month and included in the list of Liquid Contract Months for the Eligible Commodity as specified in Table 3 (*Eligible Commodities*) below.

#### 4.5 Contag Contracts

##### 4.5.1 The Previously Selected Contract

In respect of each Eligible Commodity, the Previously Selected Contract shall mean the Contag Contract for such Eligible Commodity for the month immediately preceding the Relevant Month.

##### 4.5.2 The Most Backwardated Contract

In respect of each Eligible Commodity, the Local Backwardation shall be calculated for each Eligible Contract in the Eligible Set. When determining the Local Backwardation for an Eligible Contract the Closest Dated Preceding Futures Contract in relation to such Eligible Contract shall be the Base Contract immediately preceding the Eligible Contract in the Base Set.

The Eligible Contract with the highest Local Backwardation shall be the Most Backwardated Contract for the relevant Eligible Commodity.

##### 4.5.3 Significant Benefit Test

In cases where the Previously Selected Contract is an Eligible Contract in the Eligible Set for the Relevant Month, the Significant Benefit Test is intended to determine that the Contag Contract should change from one Relevant Month to the next Relevant Month, *only* where the increase in Local Backwardation by changing the exposure of the Contag Index to the Most Backwardated Contract significantly increases the Local Backwardation.

The Index Calculation Agent shall determine whether the Significant Benefit Test is passed as follows:

The Significant Benefit Test is considered to be passed if either:

(1)  $F_{PS}$  is not in the Eligible Set; or

(2) the following inequality is true:

$$Local\ Backwardation(F_{MB}) > Local\ Backwardation(F_{PS}) + SBT$$

where:

$F_{PS}$  means the Previously Selected Contract;

$F_{MB}$  means the Most Backwardated Contract;

$SBT$  means the “Significant Benefit Threshold” and is equal to 0.005.

If the Previously Selected Contract and the Most Backwardated Contract are the same Futures Contract the Significant Benefit Test will fail.

#### 4.5.4 Choice of Contag Contract

In respect of an Eligible Commodity, the Contag Contract in respect of the Relevant Month shall be selected as follows:

If the Significant Benefit Test is passed the Contag Contract shall be the Most Backwardated Contract otherwise it shall be the Previously Selected Contract.

#### 4.6 Eligible Commodities

Eligible Commodity	Relevant Exchange	Deferring Commodity (D) or Non-Deferring Commodity (N)	Liquid Contract Months
WTI Crude Oil	NYMEX	D	Z
RBOB Gasoline	NYMEX	D	None
Heating Oil	NYMEX	D	M, Z
Natural Gas	NYMEX	D	F, H, J, V
Brent Crude Oil	ICE	D	Z
Gas Oil	ICE	D	M, Z
Gold	COMEX	N	Not Applicable
Silver	COMEX	N	Not Applicable
Aluminium	LME	D	Z
Copper	LME	D	Z
Lead	LME	D	Z
Nickel	LME	D	Z
Zinc	LME	D	Z
Corn	CBOT	D	Z

Soybeans	CBOT	D	X
Wheat	CBOT	D	N, Z
Kansas Wheat	KCBOT	D	N, Z
Cocoa	NYBOT	D	None
Coffee	NYBOT	D	None
Cotton	NYBOT	N	Not Applicable
Sugar	NYBOT	D	H
Feeder Cattle	CME	N	Not Applicable
Lean Hogs	CME	N	Not Applicable
Live Cattle	CME	D	None

**Table 3: Eligible Commodities**

## 5. Market Disruptions

If, on any Contract Selection Date, any of the conditions (i) to (iii) below apply to a Futures Contract due to comprise the Base Set then such day shall be regarded as a Disrupted Day in respect of that Futures Contract and this shall constitute a Market Disruption for such Futures Contract:

- (i) such Contract Selection Date is not a Contract Business Day with respect to such Futures Contract;
- (ii) the Contract Price of such Futures Contract on such Contract Selection Date is a Limit Price;
- (iii) no Contract Price is available for the Futures Contract on such Contract Selection Date.

If a Market Disruption exists in respect of a Futures Contract due to comprise the Base Set the Selection Methodology will be adjusted by the Index Calculation Agent as follows:

A) in cases (i) and (iii) above, the Selection Methodology will treat the Contract Price for such Contract Selection Date as being equal to the Contract Price for the relevant Futures Contract which was available on the Dealing Day immediately preceding the Contract Selection Date and on which no Market Disruption occurred. If no such Contract Price exists then that particular Futures Contract will be excluded from the Base Set and the Selection Methodology will otherwise remain unaltered; or

B) in case (ii) the Selection Methodology will not be modified and the Contract Price for such Contract Selection Date shall be the Limit Price.

J.P. Morgan Contag  
Module D: J.P. Morgan Contag Conditional  
Indices

September 2009

**J.P.Morgan**

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## **1. Contag**

Contag refers to a methodology for selecting Futures Contracts (the “Selection Methodology”) and several strategies developed by J.P. Morgan (the “Contag Indices”) that utilise this methodology. The Selection Methodology uses the slope of the futures curve of certain specified commodities in order to select a particular Futures Contract in respect of each commodity in which to synthetically gain exposure. The Selection Methodology aims to select a Futures Contract with the highest level of Local Backwardation subject to certain constraints, all as further explained the document “J.P. Morgan Contag Module A: Selection Methodology”.

## **2. This Document**

This document, Module D (*J.P. Morgan Contag Conditional Indices*), explains the construction of the J.P. Morgan Contag Conditional Indices (the “Contag Conditional Indices”). By itself this document does not define an index or product. A Contag Conditional Index is a notional rules-based proprietary commodity index reflecting a long-short synthetic exposure to commodities by reference to two excess return commodity indices (the “Long Constituent” and the “Short Constituent”).

This document should be read in conjunction with the document “J.P. Morgan Contag Module A: Selection Methodology” (the “Selection Methodology Document”). The index construction explained in this document is of a general form, with certain concepts or particulars left unspecified (for example, the choice of Long Constituent and Short Constituent). Other modules will be used to specify these particulars (each an “Externally Specified Particular”). One or more modules should be read in conjunction with this document and the Selection Methodology Document to obtain the full rules of the relevant Contag Index. Throughout this document, “Index” shall refer to a Contag Conditional Index. Each Contag Conditional Index shall have a further module setting out the Index Name and any Externally Specified Particulars or other details required by the Index Calculation Agent to determine the Index Level.

This document may be amended or supplemented from time to time at the discretion of the Index Calculation Agent and will be re-published no later than thirty (30) calendar days following such amendment or supplement.

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## **3. Definitions**

Capitalised terms used in this document should be interpreted according to the definitions given below. In many cases there is a further explanation of the term or concept in the body of this document. All terms listed under the Definitions section in the Selection Methodology Document shall be deemed to have the same meaning in this document. In the event of a conflict between definitions used in the Selection Methodology Document and this document, the term used herein shall prevail.

Unless otherwise specified, references to “Sections” or “Tables” in this Document shall mean sections or tables in this document.

The following terms are defined as follows:

Adjusted Index Level	see Section 7 ( <i>Market Disruptions</i> )
Alpha Mode	means, in respect of a Relevant Month, that the Index will capture synthetic long exposure to the Long Constituent and synthetic short exposure to the Short Constituent;
Beta Mode	means, in respect of a Relevant Month, that the Index will capture synthetic long exposure to the Long Constituent;
Change in Law	<p>means:</p> <p>(a) due to:</p> <p>(i) the adoption of, or any change in, any applicable law, regulation, rule or order (including, without limitation, any tax law); or</p> <p>(ii) the promulgation of, or any change in, the interpretation, application, exercise or operation by any court, tribunal, regulatory authority, exchange or trading facility or any other relevant entity with competent jurisdiction of any applicable law, rule, regulation, order, decision or determination (including, without limitation, as implemented by the U.S. Commodity and Futures Trading Commission or exchange or trading facility),</p> <p>in each case, the Index Calculation Agent determines in good faith that (x) it is contrary (or, upon adoption, it will be contrary) to such law, rule, regulation, order, decision or determination for any market participants that are brokers or financial intermediaries (individually or collectively) to purchase, sell, enter into, maintain, hold, acquire or dispose of any Futures Contract (in whole or in part) (in the aggregate on a portfolio basis or incrementally on a trade by trade basis) or any transaction referencing any Futures Contract or, (y) holding a position in any Futures Contract or any transaction referencing any Futures Contract is (or, but for the consequent disposal or termination thereof, would otherwise be) in excess of any allowable position limit(s) applicable to any market participants that are brokers or financial intermediaries (individually or collectively) under any such law, rule, regulation or order in relation to such Futures Contract traded on any exchange(s) or other trading facility (including, without limitation, any Relevant Exchange); or</p> <p>(b) the occurrence or existence of any:</p> <p>(i) suspension or limitation imposed on trading commodities futures contracts (including, without limitation the Futures Contracts); or</p> <p>(ii) any other event that causes trading in commodity futures contracts (including, without limitation Futures Contracts) to cease;</p>
Conditional Long-Short Signal	see Section 5.2;

Constituent	means either the Long Constituent or the Short Constituent and, for the purposes of Section 8 only, additionally means each and any S&P GSCI™ single commodity sub-index corresponding to the 24 commodities included in the S&P GSCI™ Excess Return Index as of January 2009, as referenced in the applicable S&P GSCI™ Methodology.
Contag Conditional Index	see Section 2 ( <i>This Document</i> ).
Equally Weighted Basket Consistency	see Section 5.3.2;
Equally Weighted Basket Performance	see Section 5.3.1;
Externally Specified Particular	means any value or parameter used in this document but not specified. Such values or parameters will be specified in other modules.
Index	means a particular Contag Conditional Index. The rules of such index comprise applicable modules and shall have the Index Name specified in such rules.
Index Level	means, in respect of each Dealing Day, and subject to the occurrence of a Market Disruption Event, a decimal value published by the Index Calculation Agent in accordance with Section 5.5 ( <i>The Index Level</i> )
Index Name	means the name by which the Index is identified. The Index Name is an Externally Specified Particular.
Index Sponsor	means, in respect of any Constituent or S&P GSCI™ single commodity sub-index, the corporation or other entity that (a) is responsible for setting and reviewing the rules and procedures and the methods of calculation and adjustments, if any, related to the Constituent or S&P GSCI™ single commodity sub-index and (b) announces (directly or through an agent) the level of the Constituent or S&P GSCI™ single commodity sub-index on a regular basis.
Index Ticker	means a Bloomberg™ ticker which identifies the Index. The Index Ticker is an Externally Specified Particular.
Initial Index Day	means the earliest Dealing Day in respect of which the time series of Index Levels is calculated and published by the Index Calculation Agent. The Initial Index Day is an Externally Specified Particular. The Initial Index Day may precede the day on which the Index was first calculated.
Initial Index Level	means the Index Level on the Initial Index Day. The Initial Index Level is an Externally Specified Particular.
Long Constituent	means an excess return index to which the Index has a long exposure. The Long Constituent is an Externally Specified Particular.



Market Disruption Event

means,

- a) in respect of a Constituent and a Dealing Day (such Dealing Day a “Disrupted Day” in respect of such Constituent), either:
  - i. the occurrence or continuation on such Dealing Day of a Market Disruption Event in respect of any Futures Contract (as defined in b) below) entering into the calculation of the closing level of such Constituent; or
  - ii. the occurrence of a Non-Publication Event in respect of such Constituent and such Dealing Day;
- b) in respect of a Futures Contract and a Dealing Day (such Dealing Day a “Disrupted Day” in respect of such Futures Contract), the occurrence of any of the following:
  - i. a material limitation, suspension, discontinuation or disruption of trading of such Futures Contract which results in failure by the Relevant Exchange on which such futures contract(s) is/are traded to report an official settlement price for such futures contract(s);
  - ii. a limitation, suspension or disruption of trading of such Futures Contract, by reason of movements exceeding “limit up” or “limit down” levels permitted by the Relevant Exchange and which, in the opinion of the Index Calculation Agent, is material to trading volume and market conditions in such Futures Contract on such Dealing Day;
  - iii. publication by the Relevant Exchange of a “limit price” as the official settlement price for such Futures Contract (by reason of movements exceeding “limit up” or “limit down” levels permitted by the Relevant Exchange);
  - iv. the Relevant Exchange for such Futures Contract not being open for trading during its regular trading session, regardless of whether any such exchange closes prior to its scheduled closing time.

Market Position

means the direction of exposure to each Constituent. For the Long Constituent, the Market Position of that Constituent is long. For the Short Constituent, the Market Position of that Constituent is short.

The Index will benefit from a positive return in the Long Constituent when the level of the Long Constituent increases and will benefit from a negative return in the Short Constituent when the level of the Short Constituent increases. Conversely, the Index will suffer from a negative return in the Long Constituent when the level of the Long Constituent decreases and will suffer from a positive return in the Short Constituent when the level of the Short Constituent increases.

Month-to-Date Performance

see Section 5.4 (*Month-to-Date Performance*).

Non-Publication Event

means, with respect to a Constituent and a Dealing Day, the failure by the Relevant Exchange, any Index Sponsor or other price source to announce publicly or publish the following (or the information necessary for determining the following) with respect to such Dealing Day:

- (a) the official settlement price for any relevant futures contract; or
- (b) the closing level of such Constituent, in either case by noon (London time) on the immediately following Dealing Day,

provided, however that the occurrence of such an event shall not constitute a "Non-Publication Event" in the case of clause (b) hereof if the Index Calculation Agent determines in its sole discretion by 12pm (London time) on such immediately following Dealing Day that the information necessary for determining the closing level of the relevant Constituent has been announced publicly or has been published by a Relevant Exchange, Index Sponsor or other price source in which case the Index Calculation Agent shall determine the USD Level of such Constituent in good faith and in a commercially reasonable manner.

Observation Date means the last Dealing Day the month immediately preceding the Relevant Month.

Rebalancing Date means a Dealing Day on which the synthetic exposure of the Index to the Long Constituent and the Short Constituent is rebalanced. The Rebalancing Date in respect of an Index shall be determined by reference to the Rebalancing Date Integer.

Rebalancing Dates shall be enumerated with Rebalancing Date<sub>0</sub> being the Rebalancing Date immediately preceding the Initial Index Day. The n<sup>th</sup> Rebalancing Date shall be referred to as Rebalancing Date<sub>n</sub> (abbreviated as RD<sub>n</sub>).

Rebalancing Date Integer means the Dealing Day of each calendar month on which the Rebalancing Date with respect to that calendar month occurs. The Rebalancing Date Integer is an Externally Specified Particular.

The Rebalancing Date Integer can be a positive or negative integer.

If the Rebalancing Date Integer is greater than or equal to 1, then the Rebalancing Date in respect of any calendar month will be a day in such calendar month e.g. if the Rebalancing Date Integer is 1, each Rebalancing Date will be the 1st Dealing Day of the relevant calendar month.

If the Rebalancing Date Integer is less than 1 then the Rebalancing Date in respect of any calendar month will be a day in the preceding calendar month. For example, if the Rebalancing Date Integer is 0 (zero), each Rebalancing Date will be the last Dealing Day of the preceding calendar month. Similarly, if the Rebalancing Date Integer is -1, each Rebalancing Date will be the penultimate Dealing Day of the preceding calendar month etc.

Reference Commodity Universe means, subject to the effect of the occurrence of any Extraordinary Events, the S&P GSCI™ single commodity sub-indices corresponding to the 24 commodities included in the S&P GSCI™ Excess Return Index as of January 2009, as referenced in the applicable S&P GSCI™ Methodology.

Relevant Month	means, with respect to any Component Index, the calendar month containing the Rebalancing Date in respect of which the Index Calculation Agent determines the Short Weight.
Replication Adjustment Factor	means an adjustment to the Index Level that shall have the effect of reducing the Index Level by the Replication Adjustment Rate per annum, calculated on the basis of the actual number of calendar days from, and including, the immediately preceding Rebalancing Date to, but excluding, the Dealing Day on which the Index Calculation Agent is determining the Index Level, divided by 360.
Replication Adjustment Rate	means a percentage, which may be zero, used to determine the Replication Adjustment Factor. The Replication Adjustment Rate is an Externally Specified Particular.
Short Constituent	means an excess return index to which the Index has a short exposure. The Short Constituent is an Externally Specified Particular.
Short Weight	means, in respect of a Rebalancing Date, the weight applicable to the Short Constituent as of such date.
USD Level	means: <ul style="list-style-type: none"> <li>a) in respect of a Dealing Day d and a Constituent and subject to the occurrence of a Market Disruption Event, the official closing level of the Constituent on Dealing Day d as published by the relevant Index Sponsor; and</li> <li>b) in respect of a Dealing Day d and an S&amp;P GSCI™ single commodity sub-index, the official closing level of such S&amp;P GSCI™ single commodity sub-index on Dealing Day d as published by the relevant Index Sponsor.</li> </ul>

#### 4. Index Construction Overview

The Index captures the return of synthetic long exposure to the Long Constituent and, subject to the Conditional Long-Short Signal for the Relevant Month, synthetic short exposure to the Short Constituent. Each of the Long Constituent and the Short Constituent is an excess return index i.e. they reflect synthetic exposure to uncollateralized positions in Futures Contracts. The Index itself is an excess return index.

Subject to the occurrence of a Market Disruption Event, the Index Calculation Agent shall calculate and publish the Index Level in respect of each Dealing Day, rounded to 4 decimal places, on a Bloomberg page and the Bloomberg website and the Index Level shall be identified by the Index Ticker.

The Index Level shall be determined in respect of each Dealing Day d (the Index Level on such Dealing Day being Index(d)) and is determined by reference to the Index Level published in respect of the immediately preceding Rebalancing Date ( $RD_{n-1}$ ) and the USD Levels of the Constituents on  $RD_{n-1}$  and Dealing Day d.

It should be noted that the Index is described as a notional portfolio of assets because there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. The Index Level shall be adjusted as a result of a Market Disruption Event, as described in Section 7 (*Market Disruptions*).

## 5. Calculation of the Index

### 5.1 Index Rebalancing

Subject to the occurrence of a Market Disruption Event, the Index will be rebalanced on each Rebalancing Date to adjust the synthetic exposure of the Index to the Short Constituent and the Long Constituent to account for the performance of the Index and the Constituents since the immediately preceding Rebalancing Date, and the effects of the Conditional Long-Short Signal as described below.

### 5.2 The Conditional Long-Short Signal

The Conditional Long-Short Signal is based on the Equally Weighted Basket ("EWB") of all 24 S&P GSCI™ single commodity sub-indices in the Reference Commodity Universe. It determines whether the Index will be in Alpha Mode or Beta Mode.

For each Relevant Month, the Calculation Agent shall evaluate the Conditional Long-Short Signal as either:

- (a) Long-Only, if the Equally Weighted Basket Performance is positive and the Equally Weighted Basket Consistency Test is passed; or in all other cases,
- (b) Long-Short.

If (a) applies, the Index shall be in Beta Mode for the Relevant Month, and if (b) applies, then the Index shall be in Alpha Mode for that month.

#### 5.2.1 The Short Weight

The Short Weight in respect of the Rebalancing Date falling in the Relevant Month shall be 100% if the Index is in Alpha Mode for the Relevant Month and shall be 0% if the Index is in Beta Mode for the Relevant Month.

### 5.3 Equally Weighted Basket Performance and the Equally Weighted Basket Consistency Test

#### 5.3.1 Equally Weighted Basket Performance for the Relevant Month

The Calculation Agent shall calculate the performance of a synthetic equally-weighted basket of all the S&P GSCI™ single commodity sub-indices included in the Reference Commodity Universe over a 12 month period concluding on the Observation Date for the Relevant Month (the "**Equally Weighted Basket Performance**") in accordance with the following formula:

$$EW(Month_m) = \left[ \prod_{h=0}^{11} \left( \frac{1}{24} \cdot \sum_{i=1}^{24} \left( \frac{Level_i(Month_{m-h+1})}{Level_i(Month_{m-h})} \right) \right) - 1 \right]$$

Where:

$Level_i(Month_{m-h+1})$  is the USD Level of the i-th S&P GSCI™ single commodity sub-index in the Reference Commodity Universe at the close of the last Dealing Day of the calendar month  $h$  months before the Observation Date. For the avoidance of doubt, the month which is zero months before the Observation Date is the month in which said date occurs;

$Level_i(Month_{m-h})$  is the USD Level of the i-th S&P GSCI™ single commodity sub-index in the Reference Commodity Universe at the close of the last Dealing Day of the calendar month  $h+1$  months before the Observation Date; and,

$EW(Month_m)$  means the Equally Weighted Basket Performance measured over the 12 month period concluding on the Observation Date.

### 5.3.2 Equally Weighted Basket Consistency Test for the Relevant Month

The Calculation Agent will calculate the “**Equally Weighted Basket Consistency**” in accordance with the following formula:

$$ConsistencyEW (Month_m) = \sum_{h=0}^{h=11} IndicatorEW_i (Month_{m-h+1})$$

Where:

$$IndicatorEW_i (Month_{m-h+1}) = \begin{cases} C_h & \text{if } \frac{1}{24} \sum_{i=1}^{24} \left( \frac{Level_i (Month_{m-h+1})}{Level_i (Month_{m-h})} \right) - 1 > 0 \\ 0 & \text{Otherwise} \end{cases}$$

Where:

$Level_i (Month_{m-h+1})$  and  $Level_i (Month_{m-h})$  are defined in Section 5.3.1;

$C_h$  is defined by  $C_h = A \times e^{-r \cdot (h-1)}$ ;

$e$  means the base of the natural logarithm;

$A, r$  are constants that are calibrated so that:  $\frac{C_1}{C_{12}} = 5$  and

$$\sum_{h=1}^{12} C_h = 12,$$

which gives  $A = 1.97449$   $r = 0.14631$  to an accuracy of 5 decimal places.

### 5.3.3 Requirement to pass the Equally Weighted Basket Consistency Test

The Equally Weighted Basket shall be deemed to have successfully passed the “**Equally Weighted Basket Consistency Test**” any Observation Date if:

$$ConsistencyEW (Month_m) \geq 6$$

## 5.4 Month-To-Date Performance

The Month-To-Date Performance on Dealing Day d (MTDP(d)) represents the net return of synthetic unleveraged long exposure to the Long Constituent and, subject to the Conditional Long-Short Signal, synthetic short exposure to the Short Constituent, since the Rebalancing Date immediately preceding Dealing Day d (henceforth RD<sub>n-1</sub>).

The Month-To-Date Performance is determined by the Index Calculation Agent in respect of Dealing Day d in accordance with the following formula:

$$MTDP(d) = \left( \frac{Level_{Long}(d)}{Level_{Long}(RD_{n-1})} - 1 \right) - ShortWeight(RD_{n-1}) \times \left( \frac{Level_{Short}(d)}{Level_{Short}(RD_{n-1})} - 1 \right)$$

where

$Level_{Long}(d)$  means the USD Level of the Long Constituent on Dealing Day d.

$Level_{Short}(d)$  means the USD Level of the Short Constituent on Dealing Day d.

$ShortWeight(RD_{n-1})$  means the Short Weight in respect of Dealing Day  $RD_{n-1}$ , determined as above.

## 5.5 The Index Level

The Index Level on the Initial Index Day is the Initial Index Level.

In respect of each Dealing Day d following the Initial Index Day, the Index Level will be determined by the Index Calculation Agent as follows:

$$Index(d) = [Index(RD_{n-1}) + Index(RD_{n-1}) \times MTDP(d)] \times (1 - RAF_d)$$

$Index(RD_{n-1})$  means the Index Level on the Rebalancing Date immediately preceding Dealing Day d, rounded to 4 decimals.

$MTDP(d)$  is the Month-To-Date Performance on Dealing Day d, as defined above.

$RAF_d$  is the Replication Adjustment Factor, calculated by the Index Calculation Agent as follows:

$$RAF_d = 1 - (1 - RAR)^{\frac{CalendarDays}{360}}$$

where:

$RAR$  is the Replication Adjustment Rate; and

Calendar Days is the number of calendar days from, and including, the Rebalancing Date immediately preceding Dealing Day d to, but excluding, Dealing Day d.

## 6. Publication

Subject to the occurrence or existence of a Market Disruption Event, the Index Calculation Agent shall calculate and publish the Index Level in respect of each Dealing Day (although the Index Calculation Agent may calculate the Index Level with greater frequency and share this calculation with its affiliates for internal purposes).

The Index Level will be published on a Bloomberg page and the Bloomberg website at the pages indicated by the Index Ticker.

The Index Level shall be published to 4 decimal places.

## 7. Market Disruptions

If, with respect to any Dealing Day  $t$ , a Market Disruption Event has occurred on:

- (a) Dealing Day  $t$ ; or
- (b) the Rebalancing Date immediately preceding Dealing Day  $t$ ,

then:

- (i) the Index Level in respect of Dealing Day  $t$  shall be equal to the Adjusted Index Level in respect of  $t$  and observed as at  $t$  ( $AdjIndex_t(t)$ ), calculated and published by the Index Calculation Agent where, for the avoidance of doubt,  $AdjIndex_t(t)$  is calculated in accordance with the following procedure for calculating  $AdjIndex_s(d)$  in the particular case that  $s$  is equal to  $t$  and  $d$  is equal to  $t$ ; and
- (ii) the Index Calculation Agent shall calculate the Adjusted Index Level in respect of  $t$  and observed as at each Dealing Day  $s$  from and following  $t$ , until the first Dealing Day  $s'$  for which, in respect of each Futures Contract entering into the calculation of the Index, there has been at least one Dealing Day (from, and including,  $t$  to, and including,  $s'$ ) which is not a Disrupted Day. The Adjusted Index Level in respect of  $t$  and observed as at such Dealing Day  $s'$  ( $AdjIndex_{s'}(t)$ ) shall be the **"Final Adjusted Index Level"**. It follows from the procedure described below that  $s'$  shall occur no later than 5 Dealing Days following  $t$ . For the avoidance of doubt,  $AdjIndex_{s'}(t)$ , calculated in accordance the following procedure for calculating  $AdjIndex_s(d)$  in the particular case that  $s$  is equal to  $s'$  and  $d$  is equal to  $t$ ,

all, in accordance with the following procedure:

### Adjusted Index Level in respect of $d$ observed as at $s$ (" $AdjIndex_s(d)$ ")

The formula given in Section 5.5 (The Index Level) above for the calculation of the Index Level shall be modified to calculate the Adjusted Index Level in respect of Dealing Day  $d$  as observed at Dealing Day  $s$  (" $AdjIndex_s(d)$ ") as follows:

$$AdjIndex_s(d) = [AdjIndex_s(RD_{n-1}) + AdjIndex_{RD_{n-1}}(RD_{n-1}) \times AdjMTDP_s(d)] \times (1 - RAF_d)$$

where:

$AdjMTDP_s(d)$  means the Adjusted Month-to-Date Performance in respect of Dealing Day  $d$  and observed as at Dealing Day  $s$ , defined as follows:

$$AdjMTDP_s(d) = \left( \frac{AdjLevel_{Long,s}(d)}{AdjLevel_{Long,s}(RD_{n-1})} - 1 \right) - ShortWeight(RD_{n-1}) \left( \frac{AdjLevel_{Short,s}(d)}{AdjLevel_{Short,s}(RD_{n-1})} - 1 \right)$$

$AdjIndex_s(RD_{n-1})$  means the Adjusted Index Level in respect of  $RD_{n-1}$  as observed at Dealing Day  $s$

$AdjIndex_{RD_{n-1}}(RD_{n-1})$  means the Adjusted Index Level in respect of  $RD_{n-1}$  as observed at  $RD_{n-1}$

where:

$AdjLevel_{Long,s}(RD_{n-1})$  means  $AdjLevel_{c,s}(d)$  where  $c$  is the Long Constituent and  $d$  is  $RD_{n-1}$ ;

$AdjLevel_{Short,s}(RD_{n-1})$  means  $AdjLevel_{c,s}(d)$  where  $c$  is the Short Constituent and  $d$  is  $RD_{n-1}$ ;

$AdjLevel_{Long}(d)$  means  $AdjLevel_{c,s}(d)$  where  $c$  is the Long Constituent;

$AdjLevel_{Short,s}(d)$  means  $AdjLevel_{c,s}(d)$  where  $c$  is the Short Constituent;

$AdjLevel_{c,s}(d)$  means the Adjusted USD Level of Constituent  $c$  in respect of Dealing Day  $d$  and observed as at Dealing Day  $s$ , defined as follows:

- a) if Dealing Day  $d$  is not a Disrupted Day in respect of any Futures Contract entering into the calculation of the closing level of Constituent  $c$ , the USD Level of Constituent  $c$  on Dealing Day  $d$ ; otherwise,
- b) the level for Constituent  $c$  calculated by the Index Calculation Agent in respect of Dealing Day  $d$  in accordance with the rules of Constituent  $c$  by reference to:
  - i. with respect to each Futures Contract included in Constituent  $c$  which is not affected by Market Disruption Event on  $d$ , the settlement price of such Futures Contract on Dealing Day  $d$  as published by the Relevant Exchange; and
  - ii. with respect to each Futures Contract included in Constituent  $c$  which is affected by a Market Disruption Event on Dealing Day  $d$  (each an "Affected Futures Contract"):
    - (a) the settlement price of the each such Affected Futures Contract as published by the Relevant Exchange on the Dealing Day which was first to occur during the period from, and including, Dealing Day  $d$  to, and including, Dealing Day  $s$  on which no Market Disruption Event exists or is occurring with respect to such Affected Futures Contract; or
    - (b) in the case that there is no such Dealing Day as mentioned in (a) above, the settlement price of such Affected Futures Contract as published by the Relevant Exchange on the most recent Dealing Day on or before Dealing Day  $s$  on which a settlement price has been published for such Affected Futures Contract (whether or not there has been a Market Disruption Event on such day),

*provided that* if a Market Disruption Event continues for 5 consecutive Dealing Days following Dealing Day  $d$ , the price of such Affected Futures Contract used by the Index Calculation Agent in determining the level for Constituent  $c$  in respect of Dealing Day  $d$  (the "Index Calculation Agent Determined Price") shall be determined by the Index Calculation Agent acting in good faith and using such information and/or methods as it deems appropriate (notwithstanding the existence of a Market Disruption Event), and in such case such Index Calculation Agent Determined Price for such Affected Futures Contract will apply in the determination of Adjusted USD Level of Constituent  $c$  in respect of Dealing Day  $d$  and as observed at each Dealing Day following  $d + 5$ .



## **8. Extraordinary Events**

### 8.1

If either Constituent is (a) not calculated and announced by the Index Sponsor but is calculated and announced by a successor sponsor acceptable to the Index Calculation Agent, or (b) replaced by a successor index using, in the determination of the Index Calculation Agent, the same or substantially similar formula for and method of calculation as used in the calculation of such Constituent, then such index will be deemed to be the index so calculated and announced by that successor index sponsor or that successor index, as the case may be.

### 8.2

If on or prior to any Dealing Day on which the Index Calculation Agent is determining the Index Level of a Contag Conditional Index the Index Sponsor makes a material change in the formula for or the method of calculating the relevant Constituent (other than a modification prescribed in that formula or method to maintain such index in the Constituent or prescribed routine events) which affects the ability of the Index Calculation Agent to define an Externally Specified Particular in respect of a Contag Conditional Index, then the Index Calculation Agent shall, in good faith, make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, Externally Specified Particular or any other rule in relation to the Contag Conditional Index to account for such modification.

### 8.3

If on or prior to any Dealing Day on which the Index Calculation Agent is determining the Index Level of a Contag Conditional Index an Index Sponsor permanently cancels the relevant Constituent, and no successor index exists, the Index Calculation Agent shall, in good faith, either:

- (i) continue to calculate the Index Level of the relevant Contag Conditional Index using the latest available Externally Specified Particulars at the time the Constituent was cancelled; or
- (ii) make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, valuation terms or any other rule in relation to the relevant Contag Conditional Index to account for such cancellation.

### 8.4 Change in Law/ Inaccurate Contract Prices

Without prejudice to the ability of the Index Calculation Agent to amend the Rules (see Section 2 (*This Document*) above), the Index Calculation Agent may, acting in good faith and in a commercially reasonable manner:

- (a) exclude; or
- (b) substitute,

any Futures Contract following the occurrence (and/or continuation) of a Change in Law or in circumstances where it considers it reasonably necessary to do so to reflect the intention of the Contag Conditional Indices, including (without prejudice to the generality of the foregoing) any perception among market participants generally that the published price of the relevant Futures Contract is inaccurate (and the Relevant Exchange fails to correct such level), and if it so excludes or substitutes any Futures Contract, then the Index Calculation Agent may adjust the Rules as it determines in good faith to be appropriate to account for such exclusion or substitution on such date(s) selected by the Index Calculation Agent. The Index Calculation Agent is under no obligation to continue the calculation and publication of any Contag Conditional Indices upon the occurrence or existence of a Change in Law; and the Index Calculation Agent may decide to cancel any Contag Conditional Indices if it determines, acting in good faith, that the objective of the relevant Contag Conditional Indices can no longer be achieved.

## 9. Risk Factors

The following list of risk factors does not purport to be a complete enumeration or explanation of all the risks associated with Contag Conditional Indices and should be read in conjunction with any other relevant modules in respect of the Index, where applicable.

- (i) Past performance should not be used as a guide to future performance

The past performance of the Index or any Contag Conditional Indices should not be used as a guide to future performance of the Index or such index. Any back-testing or similar analysis performed by any person in respect of a Contag Conditional Index must be considered illustrative only and may be based on estimates or assumptions not used by the Index Calculation Agent when determining the Index Level pursuant to the rules of the Index.

- (ii) Synthetic Exposure to Commodities

The Contag Conditional Indices are purely synthetic. There is no pool of futures contracts to which any person is entitled or in which any person has any ownership interest or which serve as collateral for the return on any product referencing Contag Conditional Indices.

- (iii) Contag Conditional Indices are “excess return”

The return from investing in futures contracts derives from three sources:

- (a) changes in the price of the relevant futures contracts (which is known as the “price return”);
- (b) any profit or loss realised when rolling the relevant futures contracts (which is known as the “roll return”); and
- (c) any interest earned on the cash deposited as collateral for the purchase of the relevant futures contracts (which is known as the “collateral return”).

The Contag Conditional Indices are “excess return” indices which means that they measure the returns accrued from investing in uncollateralized futures contracts or, in other words, the sum of the price return and the roll return associated with an investment in futures. They do not reflect the collateral return that would be generated by a collateralised investment in commodity futures. Investing in any product linked to the Contag Conditional Indices will therefore not generate the same return as one would obtain from a collateralised investment in the relevant futures contracts.

- (iv) Commodity prices impacted by global macro-economic and political factors

Prices for commodities are affected by a variety of factors, including changes in supply and demand relationships, governmental programmes and policies, national and international political and economic events, wars and acts of terror, changes in interest and exchange rates, trading and speculative activities in commodities and related contracts, weather, and agricultural, trade, fiscal, monetary and exchange control policies. The price volatility of each commodity also affects the value of the futures and forward contracts related to that commodity and therefore its price at any such time. The price of any one commodity may be correlated to a greater or lesser degree with any other commodity and factors affecting the general supply and demand as well as the prices of other commodities may affect the particular commodity in question.

In respect of commodities in the energy sector, due to the significant level of its continuous consumption, limited reserves, and oil cartel controls, energy prices are subject to rapid price increases in the event of perceived or actual shortages. These factors (when combined or in isolation) may affect the price of futures contracts and, as a consequence, the performance of the Contag Conditional Indices and the Index Level.

The commodities markets are subject to temporary distortions or other disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators and government regulation and intervention. These circumstances could adversely affect the price of futures contracts and, therefore, the performance of the Contag Conditional Indices and the Index Level.

(v) Short Exposure

Contag Conditional Indices include synthetic short exposure to the Short Constituent. The potential losses in the case of short exposure are unlimited since in general there is no limit to the possible increase in the USD Level of the Short Constituent.

(vi) Diversification

Diversification is generally considered to reduce the amount of risk associated with generating returns, however can be no assurance that Contag Conditional Indices will be sufficiently diversified at any time to reduce or minimize such risks to any extent.

(vii) Index Calculation Agent discretion

The Index Calculation Agent is entitled to exercise certain discretions in relation to Contag Conditional Indices, including but not limited to, the determination of the values to be used in the event of Market Disruptions and the interpretation of these Rules. Although the Index Calculation Agent will make all determinations and take all action in relation to Contag Conditional Indices acting in good faith, such discretion could have an impact, positive or negative, on the Index Level.

(viii) Potential Conflicts of Interest

Potential conflicts of interest may exist in the structure and operation of Contag Conditional Indices and the conduct of normal business activities for the Index Calculation Agent or any of its affiliates or subsidiaries or their respective directors, officers, employees, representatives, delegates or agents (a "Relevant Person").

During the course of their normal business, the Index Calculation Agent or any Relevant Person may enter into or promote, offer or sell transactions or investments (structured or otherwise) linked to the Indices or any of their components. In addition, any Relevant Person may have, or may have had, interests or positions, or may buy, sell or otherwise trade positions in or relating to the Indices or any of their components, or may invest or engage in transactions with other persons, or on behalf of such persons relating to any of these items. Such activity could give rise to a conflict of interest, and such conflict may have an impact, positive or negative, on the level of the Indices. Neither the Index Calculation Agent nor any Relevant Person has any duty to consider the circumstances of any person when participating in such transactions or to conduct themselves in a manner that is favourable to anyone with exposure to the Indices.

The foregoing list of risk factors is not intended to be exhaustive. Anyone reading these Rules should seek such advice as they consider necessary from their professional advisors, legal, tax or otherwise, without reliance on any Relevant Person to satisfy themselves that they fully understand these Rules and the risks associated with Contag Conditional Indices.

J.P. Morgan Contag  
Module D(ii): J.P. Morgan Contag Conditional  
Full Energy Excess Return Index and the J.P.  
Morgan Contag Conditional Light Energy  
Excess Return Index

September 2009

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## 1. Contag

Contag refers to a methodology for selecting Futures Contracts (the “Selection Methodology”) and several strategies developed by J.P. Morgan (the “Contag Indices”) that utilise this methodology. The Selection Methodology uses the slope of the futures curve of certain specified commodities in order to select a particular Futures Contract in respect of each commodity in which to synthetically gain exposure. The Selection Methodology aims to select a Futures Contract with the highest level of Local Backwardation subject to certain constraints, all as further explained the document “J.P. Morgan Contag Module A: Selection Methodology”.

## 2. This Document

This document, Module D(ii) (*J.P. Morgan Contag Conditional Full Energy Excess Return Index and the J.P. Morgan Contag Conditional Light Energy Excess Return Index*), explains the J.P. Morgan Contag Conditional Full Energy Excess Return Index (“Contag Conditional FE”) and the J.P. Morgan Contag Conditional Light Energy Excess Return Index (“Contag Conditional LE”) and each a “Contag Conditional Index”). By itself this document does not define an index or product. This document provides the Externally Specified Particulars required for the calculation of each of Contag Conditional FE and Contag Conditional LE.

This document should be read in conjunction with “J.P. Morgan Contag Module A: Selection Methodology” (the “Selection Methodology Document”) and “J.P. Morgan Contag Module D: J.P. Morgan Contag Conditional Indices” (the “Conditional Index Document”) and together they comprise the rules (the “Rules”) of the Contag Conditional Indices. These Rules may be amended or supplemented from time to time at the discretion of the Index Calculation Agent and will be re-published no later than thirty (30) calendar days following such amendment or supplement.

These Rules are published by J.P. Morgan Securities Ltd. (“JPMSL”) of 125 London Wall, London EC2Y 5AJ, UK in its capacity as Index Calculation Agent. A copy of the Rules is available from the Index Calculation Agent.

ALL PERSONS READING THIS DOCUMENT SHOULD REFER TO THE DISCLAIMERS AND CONFLICTS SECTIONS SET OUT BELOW AND CONSIDER THE INFORMATION CONTAINED IN THIS DOCUMENT IN LIGHT OF SUCH DISCLAIMERS AND CONFLICTS.

NOTHING HEREIN CONSTITUTES AN OFFER TO BUY OR SELL ANY SECURITIES, PARTICIPATE IN ANY TRANSACTION OR ADOPT ANY INVESTMENT STRATEGY OR LEGAL, TAX, REGULATORY OR ACCOUNTING ADVICE.

Each of JPMSL and its affiliates may have positions or engage in transactions in securities or other financial instruments based on or indexed or otherwise related to the Contag Conditional Indices.

## 3. Overview

Contag Conditional FE and Contag Conditional LE each reflect the return of synthetic exposure in a Long Constituent and a Short Constituent. Subject to the occurrence or existence of a Market Disruption Event, the Index Calculation Agent shall calculate and publish the Index Level in respect of each Dealing Day in accordance with the methodology specified in the Conditional Index Document.

Contag Conditional FE aims to achieve a long synthetic exposure to the J.P. Morgan Contag Beta Full Energy Class A Excess Return Index (Bloomberg ticker: JCTABFEE Index) and a short synthetic exposure to the S&P GSCI™ Index ER (Bloomberg ticker: SPGCCIP Index).

Contag Conditional LE aims to achieve a long synthetic exposure to the J.P. Morgan Contag Beta Light Energy Class A Excess Return Index (Bloomberg ticker: JCTABLEE Index) and a short synthetic exposure to the S&P GSCI™ Light Energy Index ER (Bloomberg ticker: SPGCLEP Index).

The difference between Contag Conditional FE and Contag Conditional LE is the definition of the Long Constituent and Short Constituent as described in the sections below.

#### 4. Externally Specified Particulars: Contag Conditional FE

The Externally Specified Particulars for Contag Conditional FE are as described in Table 1 (*Externally Specified Particulars in respect of Contag Conditional FE*) below:

<i>Externally Specified Particular</i>	<i>Definition in respect of the Contag Conditional FE</i>
Index Name	J.P. Morgan Contag Conditional Full Energy Excess Return Index
Index Ticker	JCTBCFEE Index
Long Constituent	J.P. Morgan Contag Beta Full Energy Class A Excess Return Index [Ticker: JCTABFEE Index]
Short Constituent	S&P GSCI™ Index ER [Ticker: SPGCCIP Index]
Rebalancing Date Integer	1 (the first Dealing Day of every month)
Initial Index Day	30th December 1994
Initial Index Level	100
Replication Adjustment Rate	0.96%

**Table 1: Externally Specified Particulars in respect of Contag Conditional FE**

#### 5. Externally Specified Particulars: Contag Conditional LE

The Externally Specified Particulars for Contag Conditional LE are as described in Table 2 (*Externally Specified Particulars in respect of Contag Conditional LE*) below:

<i>Externally Specified Particular</i>	<i>Definition in respect of the Contag Conditional LE</i>
Index Name	J.P. Morgan Contag Conditional Light Energy Excess Return Index
Index Ticker	JCTBCLEE Index
Long Constituent	J.P. Morgan Contag Beta Light Energy Class A Excess Return Index [Ticker: JCTABLEE Index]
Short Constituent	S&P GSCI™ Light Energy Index ER [Ticker: SPGCLEP Index]
Rebalancing Date Integer	1 (the first Dealing Day of every month)
Initial Index Day	30th December 1994
Initial Index Level	100
Replication Adjustment Rate	0.96%

**Table 2: Externally Specified Particulars in respect of Contag Conditional LE**

#### 6. Modifications to or Cancellation of the Constituents

##### 6.1

If any Constituent (such, an “Affected Index”) is (a) not calculated and announced by the Index Sponsor but is calculated and announced by a successor sponsor acceptable to the Index Calculation Agent, or (b) replaced by a successor index using, in the determination of the Index Calculation Agent, the same or substantially similar formula for and method of calculation as used in the calculation of the “Affected Index”, then such index will be deemed to be the index so calculated and announced by that successor index sponsor or that successor index, as the case may be.

##### 6.2

If on or prior to any Dealing Day on which the Index Calculation Agent is determining the Index Level of either of the Contag Conditional FE and Contag Conditional LE the Index Sponsor makes a material change in the formula for or the method of calculating a Constituent (other than a modification prescribed in that formula or method to maintain such index or prescribed routine events), then the Index Calculation Agent shall, in good faith, make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, Externally Specified Particular or any other rule in relation to the Contag Conditional FE and Contag Conditional LE to account for such modification.

### 6.3

If on or prior to any Dealing Day on which the Index Calculation Agent is determining the Index Level of either of the Contag Conditional FE and Contag Conditional LE the Index Sponsor permanently cancels any Constituent, and no successor index exists, the Index Calculation Agent shall, in good faith, make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, valuation terms or any other rule in relation to the Contag Conditional Indices to account for such cancellation.

## 7. Responsibility of Index Calculation Agent

The Index Calculation Agent's determinations in respect of the Contag Conditional Indices and interpretation of the Rules shall be final.

The Index Calculation Agent shall act in good faith and in a commercially reasonable manner.

Whilst these Rules are intended to be comprehensive, ambiguities may arise. In such circumstances the Index Calculation Agent will resolve such ambiguities in a reasonable manner and, if necessary, amend these Rules to reflect such resolution.

Neither the Index Calculation Agent nor any of its affiliates or subsidiaries or any of their respective directors, officers, employees, delegates or agents (each a "Relevant Person") shall have any responsibility to any person (whether as a result of negligence or otherwise) for any determinations made or anything done (or omitted to be determined or done) in respect of the Contag Conditional Indices or in respect of the publication of the Index Level (or failure to publish such level) and any use to which any person may put the Contag Conditional Indices or the Index Levels. All determinations of the Index Calculation Agent in respect of the Contag Conditional Indices shall be final, conclusive and binding and no person shall be entitled to make any claim against any of the Relevant Persons in respect thereof. Once a determination or calculation is made or action taken by the Index Calculation Agent or any other Relevant Person in respect of the Contag Conditional Indices, neither the Index Calculation Agent nor any other Relevant Person shall be under any obligation to revise any determination or calculation made or action taken for any reason.

## 8. Corrections

In the event that (a) the USD Level of any Constituent used to calculate the Index Level in respect of any Dealing Day is subsequently corrected and the correction is published by the relevant Index Sponsor before the next following Rebalancing Date or (b) the Index Calculation Agent identifies an error or omission in any of its calculations or determinations in respect of the Contag Conditional Indices, then the Index Calculation Agent may, if practicable and the correction is deemed material by the Index Calculation Agent, adjust or correct the Index Level published in respect of the relevant Dealing Day and each subsequent Dealing Day and publish such corrected Index Level(s) as soon as reasonably practicable.

## 9. Notices, Disclaimers and Conflicts

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The Index Calculation Agent is under no obligation to continue the calculation, publication and dissemination of any of the Contag Conditional Indices or any Index Level.

During the course of their normal business, the Index Calculation Agent or any other Relevant Person may enter into or promote, offer or sell transactions or investments (structured or otherwise) linked to the Contag Conditional Indices and/or any of the Futures Contracts. In addition, any Relevant Person may have, or may have had, interests or positions, or may buy, sell or otherwise trade positions in or relating to the Contag Conditional Indices or any of the Futures Contracts, or may invest or engage in transactions with other persons, or on behalf of such persons relating to any of these items. Such activity may or may not have an impact on the Index Levels but all persons reading these Rules should be aware that a conflict of interest could arise where anyone is acting in more than one capacity. Neither the Index Calculation Agent nor any other Relevant Person has any duty to consider the circumstances of any person when participating in such transactions or to conduct themselves in a manner that is favourable to any person.

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It should be noted that the Contag Conditional Indices are described as a notional portfolio of assets because there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. The Contag Conditional Indices merely identify certain assets in the market, the performance of which will be used as a reference point for the purposes of calculating the Index Levels.

There is no obligation upon the Index Calculation Agent to publish the Index Levels by any alternative method if the relevant Index Ticker (as identified above) is subject to any delay in or interruptions of publication or any act of God, act of governmental authority, or act of public enemy, or due to war, the outbreak or escalation of hostilities, fire, flood, civil commotion, insurrection, labour difficulty including, without limitation, any strike, other work stoppage, or slow-down, severe or adverse weather conditions, power failure, communications line or other technological failure may occur or any other event beyond the control of the Index Calculation Agent.

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## Annex B

# J.P. Morgan Contag Module B: J.P. Morgan Contag Beta Indices

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## 1. Contag

Contag refers to a methodology for selecting Futures Contracts (the "Selection Methodology") and several strategies developed by J.P. Morgan (the "Contag Indices") that utilise this methodology. The Selection Methodology uses the slope of the futures curve of certain specified commodities in order to select a particular Futures Contract in respect of each commodity in which to synthetically gain exposure. The Selection Methodology aims to select a Futures Contract with the highest level of Local Backwardation subject to certain constraints, all as further explained the document "J.P. Morgan Contag Module A: Selection Methodology").

## 2. This Document

This document, Module B (*J.P. Morgan Contag Beta Indices*), explains the construction of the J.P. Morgan Contag Beta Indices (the "Contag Beta Indices"). By itself this document does not define an index or product. A Contag Beta Index is a notional rules-based proprietary commodity index reflecting an unleveraged, long only synthetic exposure to commodities by reference to Futures Contracts selected by the Selection Methodology.

This document should be read in conjunction with the document "J.P. Morgan Contag Module A: Selection Methodology" (the "Selection Methodology Document"). The index construction explained in this document is of a general form, with certain concepts or particulars left unspecified (for example, the values of the Commodity Weights). Other modules will be used to specify these particulars (each an "Externally Specified Particular"). One or more modules should be read in conjunction with this document and the Selection Methodology Document to obtain the full rules of the relevant Contag Index. Throughout this document, "Index" shall refer to a Contag Beta Index. Each Contag Beta Index shall have a further module setting out the Index Name and any Externally Specified Particulars or other details required by the Index Calculation Agent to determine the Index Level.

This document may be amended or supplemented from time to time at the discretion of the Index Sponsor and will be re-published no later than thirty (30) calendar days following such amendment or supplement.

This document is published by J.P. Morgan Securities Ltd. ("JPMSL") of 125 London Wall, London EC2Y 5AJ, UK in its capacity as Index Sponsor. A copy of this document is available from the Index Sponsor.

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NOTHING HEREIN CONSTITUTES AN OFFER TO BUY OR SELL ANY SECURITIES, PARTICIPATE IN ANY TRANSACTION OR ADOPT ANY INVESTMENT STRATEGY OR LEGAL, TAX, REGULATORY OR ACCOUNTING ADVICE.

Each of JPMSL and its affiliates may have positions or engage in transactions in securities or other financial instruments based on or indexed or otherwise related to the Contag Beta Indices.

## 3. Definitions

Capitalised terms used in this document should be interpreted according to the definitions given below. In many cases there is a further explanation of the term or concept in the body of this document. All terms listed under the Definitions section in the Selection Methodology Document shall be deemed to have the same meaning in this document. In the event of a conflict between definitions used in the Selection Methodology Document and this document, the term used herein shall prevail.

Unless otherwise specified, references to "Sections" or "Tables" in this Document shall mean sections or tables in this Document.

The following terms are defined as follows:

Change in Law	means:
	(a) due to:

- (i) the adoption of, or any change in, any applicable law, regulation, rule or order (including, without limitation, any tax law); or
- (ii) the promulgation of, or any change in, the interpretation, application, exercise or operation by any court, tribunal, regulatory authority, exchange or trading facility or any other relevant entity with competent jurisdiction of any applicable law, rule, regulation, order, decision or determination (including, without limitation, as implemented by the CFTC or exchange or trading facility), in each case occurring on or after the Initial Index Day,

in each case, the Index Calculation Agent determines in good faith that it is contrary (or, upon adoption, it will be contrary) to such law, rule, regulation, order, decision or determination for any market participants that are brokers or financial intermediaries (individually or collectively) to purchase, sell, enter into, maintain, hold, acquire or dispose of any Futures Contracts or any transaction referencing any Futures Contract (in whole or in part) (in the aggregate on a portfolio basis or incrementally on a trade by trade basis) including (without limitation) if such Futures Contract (in whole or in part) are (or, but for the consequent disposal thereof, would otherwise be) in excess of any allowable position limit(s) applicable to any market participants that are brokers or financial intermediaries (individually or collectively) in relation to any Futures Contract traded on any exchange(s) or other trading facility; or

- (b) the occurrence or existence of any:
  - (i) suspension or limitation imposed on trading commodities futures contracts (including, without limitation the Futures Contracts); or
  - (ii) any other event that causes trading in commodity futures contracts (including, without limitation Futures Contracts) to cease;

Commodity Weight means, in respect of an Eligible Commodity and each Weights Period, a decimal number representing the number of units of that Eligible Commodity in the Nominal Basket used in the calculation of the Index Level. The Commodity Weights are Externally Specified Particulars;

Commodity Weight Incoming (" $CWI_d^c$ ") means, in respect of Dealing Day d and Eligible Commodity c, the Commodity Weight in respect of the Weights Period in which such Dealing Day falls;

Commodity Weight Outgoing (" $CWO_d^c$ ") means, in respect of Dealing Day d and Eligible Commodity c, the Commodity Weight in respect of the Weights Period for the month immediately preceding the Relevant Month in which such Dealing Day falls.

Contag Beta Index see Section 2 (*This Document*);

Contract Price Incoming (" $CPI_{cd}^c(vd)$ ") means the Contract Price on Dealing Day vd (the "Valuation Day") of the Incoming Contract for Dealing Day cd (the "Composition Day") for Eligible Commodity c;

Contract Price Outgoing (“ $CPO_{cd}^c(vd)$ ”)	means the Contract Price on Dealing Day vd (the “Valuation Day”) of the Outgoing Contract for Dealing Day cd (the “Composition Day”) for Eligible Commodity c;
Contract Roll Weight Incoming (“ $CRWI_d^c$ ”)	see Section 5.3 ( <i>Contract Roll Weights</i> );
Contract Roll Weight Outgoing (“ $CRWO_d^c$ ”)	see Section 5.3 ( <i>Contract Roll Weights</i> );
Current Month	means, in relation to a Dealing Day d, the calendar month in which such day falls;
Externally Specified Particular	means any value or parameter used in this document but not specified. Such values or parameters will be specified in other modules;
Incoming Contract	means, in respect of an Eligible Commodity and Dealing Day d, the applicable Contag Contract for the Current Month;
Index	means a particular Contag Beta Index comprising the applicable modules as specified in another relevant module and bearing the Index Name specified in such relevant module;
Initial Index Day	means the first date in respect of which values of the Index are published by the Index Calculation Agent. The Initial Index Day is an Externally Specified Particular;
Initial Index Level	means the level of the Index on the Initial Index Day. The Initial Index Level is an Externally Specified Particular;
Index Level	means in respect of each Dealing Day, and subject to the occurrence of a Market Disruption, a decimal value published by the Index Calculation Agent in accordance with Section 5.6 ( <i>The Index Level</i> );
Index Name	means the name by which the Index is identified. The Index Name is an Externally Specified Particular;
Index Ticker	means a Bloomberg™ ticker which identifies the Index. The Index Ticker is an Externally Specified Particular;
Investment Return (“IR”)	see Section 5.6 ( <i>The Index Level</i> );
New Normalising Constant	see Section 5.2 ( <i>Normalising Constant</i> );
New Weights Period	see Section 5.2 ( <i>Normalising Constant</i> );
Nominal Basket	see Section 5.6 ( <i>Nominal Basket</i> );
Normalising Constant (“NC”)	see Section 5.2 ( <i>Normalising Constant</i> );
Old Normalising Constant	see Section 5.2 ( <i>Normalising Constant</i> );
Old Weights Period	see Section 5.2 ( <i>Normalising Constant</i> );

Outgoing Contract	means, in respect of an Eligible Commodity and Dealing Day d, the applicable Contag Contract for the Previous Month;
Previous Month	means, in relation to a Dealing Day d, the calendar month immediately preceding the Current Month;
Roll Period	means, with respect to any Relevant Month, the sequence of Dealing Days over which the exposure of the Index is rolled from the Outgoing Contracts to the Incoming Contracts. See Section 5.3 ( <i>Contract Roll Weights</i> );
Roll Period Starting Day	means an integer indicating the first Dealing Day of any Roll Period. The Roll Period Starting Day is an Externally Specified Particular;
Roll Period Length	means an integer indicating the length of the Roll Period measured in Dealing Days. The Roll Period Length is an Externally Specified Particular;
Rules	means, with respect to any transaction linked to the Index, the modules which comprise the Index;
Selection Methodology Document	“J.P. Morgan Contag Module A: Selection Methodology”; and
Weights Period	A period of one or more calendar months for which a set of Commodity Weights are applicable. Each Weights Period will start with the first calendar day of a month and end with the last calendar day of the same or any subsequent month. The Weights Period(s) is an (are) Externally Specified Particular(s).

#### 4. Index Construction Overview

The Index captures the return of the synthetic exposure to the Contag Contract for each Eligible Commodity during each Relevant Month, including the effect of the monthly composition change of the Index due to the roll from the Contag Contract for each Eligible Commodity for a Relevant Month to the Contag Contract for each Eligible Commodity for the next Relevant Month. The Index is constructed as an excess return index.

Subject to the occurrence of a Market Disruption, the Index Calculation Agent shall calculate and publish the Index Level in respect of each Dealing Day, rounded to 4 decimal places, on a Bloomberg page and the Bloomberg website and the Index Level shall be identified by the Index Ticker.

The Index Level shall be determined in respect of each Dealing Day d (the Index Level on such Dealing Day being  $\text{Index}_d$ ) and is determined by reference to the Index Level published in respect of the immediately preceding Dealing Day ( $\text{Index}_{d-1}$  and Dealing Day d-1 respectively) and the notional return on the exposure of the Index to the relevant Contag Contracts from the close of business on the Relevant Exchanges on Dealing Day d-1 to the close of business on the Relevant Exchanges on Dealing Day d. This notional return is measured by reference to the Contract Prices of the Contag Contracts on such Dealing Days. Where one or more Relevant Exchanges is closed on a Dealing Day, this will constitute a Market Disruption and the Contract Prices of the affected Eligible Commodities will be determined in accordance with Section 7 (*Market Disruptions*).

Each month the Selection Methodology will determine the Contag Contracts to which the Index should be synthetically exposed. When a new Contag Contract is selected on a Contract Selection Date, the Index transfers its synthetic exposure from the Previously Selected Contract to the new Contag Contract. In order to limit the possible adverse impact on the Index Level of trading out of the Previously Selected Contract and into the new Contag Contract, the exposure is transferred gradually in equal percentages per Dealing Day over the Roll Period, as explained in Section 5.3 (*Contract Roll Weights*).

#### 5. Calculation of the Index

##### 5.1 Commodity Weights

For an Eligible Commodity and each Weights Period, the Commodity Weight is a decimal number representing the number of units of that Eligible Commodity in the Nominal Basket used in the calculation of the Index Level.

## 5.2 Normalising Constant

The Normalising Constant is a number associated with each Weights Period, which is an adjustment to allow for the fact that the Commodity Weights change from one Weights Period to the next. The Commodity Weights are not percentage weights which would always sum to 100% and accordingly changes in the Commodity Weights may have the unintended side effect of increasing or decreasing the total weight of the Nominal Basket which in turn could distort the intended rate of rolling from the Outgoing Contracts to the Incoming Contracts.

A new Normalising Constant ("New Normalising Constant") is determined by the Index Calculation Agent with respect to each Weights Period (the "New Weights Period") based on:

- (a) the Contract Prices on the Dealing Day immediately preceding the first Dealing Day of the first Roll Period of the New Weights Period;
- (b) the Commodity Weights for (i) the New Weights Period and (ii) the Weights Period immediately preceding the New Weights Period (the "Old Weights Period"); and
- (c) the Normalising Constant associated with the Old Weights Period (the "Old Normalising Constant").

The New Normalising Constant is applicable to the whole of the New Weights Period. During the first Roll Period of the New Weights Period, the Nominal Basket will be based on a combination of the Commodity Weights for the Old Weights Period and the Commodity Weights for the New Weights Period.

The weight given to the Outgoing Contracts is adjusted by the ratio of the New Normalising Constant to the Old Normalising Constant as described further in Section 5.5 (*The Nominal Basket*).

The Normalising Constant:

- (a) for the Weights Period following the Initial Index Day is 1000; and thereafter
- (b) for a New Weights Period is determined by the Index Calculation Agent as follows:

$$NC_{new} = NC_{old} \times \frac{\sum_c CWI_d^c \times CPO_d^c (d-1)}{\sum_c CWO_d^c \times CPO_d^c (d-1)}$$

Where:

$NC_{new}$	means the New Normalising Constant;
$NC_{old}$	means the Old Normalising Constant, being 1000 if the Old Weights Period is the first Weights Period;
$CWI_d^c$	means the Commodity Weight Incoming in respect of Eligible Commodity c and Dealing Day d;
$CWO_d^c$	means the Commodity Weight Outgoing in respect of Eligible Commodity c and Dealing Day d; and
$CPO_d^c (d-1)$	means the Contract Price Outgoing in respect of Eligible Commodity c with Composition Day d and Valuation Day d-1.

d means the first Dealing Day of the first Roll Period of the New Weights Period

### 5.3 Contract Roll Weights

In respect of an Eligible Commodity  $c$  and a Dealing Day  $d$ , each of the Contract Roll Weight Incoming ( $CRWI_d^c$ ) and Contract Roll Weight Outgoing ( $CRWO_d^c$ ) is a number between 0.0 and 1.0, representing the fraction of the weight for that Eligible Commodity given to the Incoming Contract and the Outgoing Contract respectively and is calculated by the Index Calculation Agent in accordance with the below. It is always the case that  $CRWI_d^c + CRWO_d^c = 1$ .

The exposure of the Index to the Contag Contract in respect of an Eligible Commodity is rolled from the Outgoing Contract to the Incoming Contract over the course of a Roll Period. The Roll Period is a period of consecutive Dealing Days during each Relevant Month from, and including, the Roll Period Starting Day and continuing for a specified number of Dealing Days following such Roll Period Starting Day, being the "Roll Period Length".

(i) The Contract Roll Weight on any Dealing Day in a Roll Period

The Contract Roll Weights on each  $i$ -th Dealing Day ( $d_i$ ) of the Roll Period for a Relevant Month (where  $i$  is between 1 and Roll Period Length, inclusive) are determined by the Index Calculation Agent as follows:

$$CRWI_{d_i}^c = \frac{i}{\text{Roll Period Length}}$$

$$CRWO_{d_i}^c = 1 - \frac{i}{\text{Roll Period Length}}$$

where:

$CRWI_{d_i}^c$  means the Contract Roll Weight Incoming for Eligible Commodity  $c$  and Dealing Day  $d_i$ ;

$CRWO_{d_i}^c$  means the Contract Roll Weight Outgoing for Eligible Commodity  $c$  and Dealing Day  $d_i$ ; and

$d_i$  means the  $i$ -th Dealing Day of the Roll Period.

(ii) The Contract Roll Weight on any Dealing Day which is not in the Roll Period

The Contract Roll Weights on each Dealing Day  $d$  which is not during the Roll Period for a Relevant Month are determined by the Index Calculation Agent as follows:

(a) in respect of any Dealing Day  $d$  of the Relevant Month prior to the Roll Period Starting Day for such Relevant Month:

$$CRWI_d^c = 0.0; \text{ and}$$

$$CRWO_d^c = 1.0.$$

(b) in respect of any Dealing Day  $d$  of the Relevant Month following the last Dealing Day of the Roll Period for such Relevant Month:

$$CRWI_d^c = 1.0; \text{ and}$$



$$CRWO_d^c = 0.0.$$

Example 1: if the Roll Period Starting Day is 3 and the Roll Period Length is 4 then the Roll Period will run for 4 Dealing Days from the 3rd Dealing Day of the Relevant Month inclusive. In the absence of Market Disruptions, the Contract Roll Weights would be as shown in Table 1 immediately below:

Table 1

Dealing Day of the Relevant Month (d)	$CRWO_d^c$	$CRWI_d^c$
1	1.00	0.00
2	1.00	0.00
3 (Roll Period Starting Day)	0.75	0.25
4	0.50	0.50
5	0.25	0.75
6 (last Dealing Day of Roll Period)	0.00	1.00
7	0.00	1.00
8	0.00	1.00
etc.	etc.	etc.

#### 5.4 Adjustment of the roll for Disrupted Days

If any Dealing Day during the Roll Period is a Disrupted Day for either an Incoming Contract or an Outgoing Contract, then the portion of the roll which was scheduled to take place on that Dealing Day for the affected Eligible Commodity shall be postponed until the next following Dealing Day which is not a Disrupted Day for either of the Incoming Contract or Outgoing Contract in respect of such Eligible Commodity, irrespective of whether such day is already a day on which a portion of the roll is scheduled to take place.

Example 2: if the Roll Period Starting Day is 3 and the Roll Period Length is 4, and the 3rd and 4th Dealing Days of the Relevant Month are Disrupted Days for Corn (CBOT). Then the Contract Roll Weights for Corn (CBOT) would be as shown in Table 2 immediately below:

Table 2

Dealing Day of the Relevant Month (d)	$CRWO_d^c$	$CRWI_d^c$
1	1.00	0.00
2	1.00	0.00
3 (Roll Period Starting Day that is a Disrupted Day)	1.00	0.00
4 (Disrupted Day)	1.00	0.00
5	0.25	0.75
6 (last Dealing Day of Roll Period)	0.00	1.00
7	0.00	1.00
8	0.00	1.00
etc.	etc.	etc.

#### 5.5 The Nominal Basket

The Nominal Basket is a nominal basket of Futures Contracts representing the synthetic exposure of the Index. Associated with each Dealing Day  $cd$  (the “composition day”, i.e. the day in respect of which the Nominal Basket is composed) is a particular composition of the Nominal Basket. Furthermore, associated with each Dealing Day  $vd$  (the “valuation day”, i.e. the day on which the Nominal Basket is valued) is a level of the Nominal Basket composed in respect of Dealing Day  $cd$ , defined as follows:

$$NB_{cd}(vd) = \frac{NCI}{NCO} \sum_c CWO_{cd}^c \times CRWO_{cd}^c \times CPO_{cd}^c(vd) + \sum_c CWI_{cd}^c \times CRWI_{cd}^c \times CPI_{cd}^c(vd)$$

Where:

$NB_{cd}(vd)$	means the level of the Nominal Basket composed in respect of Dealing Day $cd$ , valued as at Dealing Day $vd$ ;
$NCO$	means the Normalising Constant in respect of the Weights Period including the Previous Month as at Dealing Day $cd$ ;
$NCI$	means the Normalising Constant in respect of the Weights Period including the Current Month as at Dealing Day $cd$ ;
$c$	means an Eligible Commodity, where the summation signs ( $\sum$ ) indicate summation over all Eligible Commodities;
$cd$	means the Dealing Day in respect of which the Nominal Basket is composed; and
$vd$	means the Dealing Day in respect of which the Nominal Basket is valued.

## 5.6 The Index Level

The Index Level on the Initial Index Day is the Initial Index Level.

In respect of each Dealing Day  $d$  following the Initial Index Day, the Index Level will be determined by the Index Calculation Agent, representing the cumulative effect of the Investment Return since the Initial Index Day, in accordance with the following formula:

$$Index_d = Index_{d-1} \times (1 + IR_d)$$

where

$IR_d$  means the Investment Return for Dealing Day  $d$ , which is determined by the Index Calculation Agent in accordance with the following formula:

$$IR_d = \frac{NAR_d}{NAI_{d-1}} - 1$$

Where:

$NAI_{d-1}$  means the Nominal Amount Invested as at Dealing Day  $d - 1$ ;

$NAR_d$  means the Nominal Amount Returned as at Dealing Day  $d$ ;

Nominal Amount  
Invested as at Dealing  
Day  $d - 1$

means  $NB_{d-1}(d - 1)$ , that is, the level of the Nominal Basket composed in respect of Dealing Day  $d-1$ , valued as at Dealing Day  $d-1$ ; and

Nominal Amount  
Returned as at Dealing  
Day  $d$

means  $NB_{d-1}(d)$ , that is, the level of the Nominal Basket composed in respect of Dealing Day  $d-1$ , valued as at Dealing Day  $d$ .

## 6. Publication

Subject to the occurrence or existence of a Market Disruption, the Index Calculation Agent shall calculate and publish the Index Level in respect of each Dealing Day (although the Index Calculation Agent may calculate the Index Level with greater frequency and share this calculation with its affiliates for internal purposes).

The Index Level will be published on a Bloomberg page and the Bloomberg website at the pages indicated by the Index Ticker.

The Index Level shall be published to 4 decimal places.

## 7. Market Disruptions

The impact of Market Disruption with respect to:

- (a) the roll is addressed in Section 5.4 (*Adjustment of the roll for Disrupted Days*); and
- (b) the valuation of the Nominal Basket and the calculation of the Normalising Constant is addressed by the Index Calculation Agent (i) taking all published Contract Prices in respect of such day; and (ii) the most recently published Contract Prices for those Futures Contracts for which no Contract Price is published by the Relevant Exchange on the Dealing Day in question.

## 8. Extraordinary Events

### 8.1 Successor Futures Contract

If any Futures Contract is:

- (a) not quoted by the Relevant Exchange but by a successor exchange acceptable to the Index Calculation Agent; or
- (b) replaced by a successor futures contract referencing, in the determination of the Index Calculation Agent, a substantially similar commodity as used in the relevant Futures Contract,

then in each case that successor futures contract (the "Successor Futures Contract") shall replace the relevant Futures Contract and the Index Calculation Agent shall determine in good faith the adjustments to the Rules set out herein, as it determines appropriate, to account for such change.

### 8.2 Change in Law/ Inaccurate Contract Prices

Without prejudice to the ability of the Index Sponsor to amend the Rules (see Section 2 (*This Document*) above), the Index Calculation Agent may, acting in good faith and in a commercially reasonable manner:

- (a) exclude; or
- (b) substitute,

any Futures Contract following the occurrence (and/or continuation) of a Change in Law or in circumstances where it considers it reasonably necessary to do so to reflect the intention of the Contag Beta Indices, including (without prejudice to the generality of the foregoing) any perception among market participants generally that the published price of the relevant Futures Contract is inaccurate (and the Relevant Exchange fails to correct such level), and if it so excludes or substitutes any Futures Contract, then the Index Calculation Agent may adjust the Rules as it determines in good faith to be appropriate to account for such exclusion or substitution on such date(s) selected by the Index Calculation Agent. The Index Calculation Agent is under no obligation to continue the calculation and publication of any Contag Beta Indices upon the occurrence or existence of a Change in Law; and the Index Calculation Agent and Index Sponsor may decide to cancel any Contag Beta Indices if they determine, acting in good faith, that the objective of the relevant Contag Beta Indices can no longer be achieved.

8.3 Material change to Futures Contract, cancellation or non-publication

If, at any time, any Relevant Exchange:

- (a) announces that it will make a material change to any Futures Contract or in any other way materially modifies such contract (other than a modification prescribed in the definition of such contract); or
- (b) (i) permanently cancels any Futures Contract and no Successor Futures Contract exists or (ii) is otherwise unable or unwilling to publish levels of the Futures Contract,

then the Index Calculation Agent may remove such futures contract from the Contag Beta Indices and may adjust the Rules as it determines in good faith to be appropriate to account for such change(s) (including, without limitation, selecting a replacement underlying futures contract traded on an equivalent exchange and having similar characteristics to the affected Futures Contract) on such date(s) as selected by the Index Calculation Agent.

## **Risk Factors**

The following list of risk factors does not purport to be a complete enumeration or explanation of all the risks associated with Contag Beta Indices and should be read in conjunction with any other relevant modules, where applicable.

### *1 Past performance should not be used as a guide to future performance*

The past performance of the Index should not be used as a guide to future performance of the Index. Any back-testing or similar analysis performed by any person in respect of Contag Beta Indices must be considered illustrative only and may be based on estimates or assumptions not used by the Index Calculation Agent when determining the Index Level pursuant to these Rules.

### *2 Synthetic Exposure to Commodities*

The Contag Beta Indices are purely synthetic. There is no pool of futures to which any person is entitled or in which any person has any ownership interest or which serve as collateral for the return on any product referencing Contag Beta Indices.

### *3 Contag Beta Indices are “excess return”*

The return from investing in futures contracts derives from three sources:

- (a) changes in the price of the relevant futures contracts (which is known as the “price return”);
- (b) any profit or loss realised when rolling the relevant futures contracts (which is known as the “roll return”); and
- (c) any interest earned on the cash deposited as collateral for the purchase of the relevant futures contracts (which is known as the “collateral return”).

The Contag Beta Indices are “excess return” indices which means that they measure the returns accrued from investing in uncollateralized futures or, in other words, the sum of the price return and the roll return associated with an investment in futures. Investing in any product linked to the Contag Beta Indices will therefore not generate the same return as one would obtain from a collateralised investment in the relevant futures contracts.

### *4 Commodity prices impacted by global macro-economic and political factors*

Prices for commodities are affected by a variety of factors, including changes in supply and demand relationships, governmental programmes and policies, national and international political and economic events, wars and acts of terror, changes in interest and exchange rates, trading and speculative activities in commodities and related contracts, weather, and agricultural, trade, fiscal, monetary and exchange control policies. The price volatility of each commodity also affects the value of the futures and forward contracts related to that commodity and therefore its price at any such time. The price of any one commodity may be correlated to a greater or lesser degree with any other commodity and factors affecting the general supply and demand as well as the prices of other commodities may affect the particular commodity in question.

In respect of commodities in the energy sector, due to the significant level of its continuous consumption, limited reserves, and oil cartel controls, energy prices are subject to rapid price increases in the event of perceived or actual shortages. These factors (when combined or in isolation) may affect the price of futures contracts and, as a consequence, the performance of the Contag Beta Indices and the Index Level.

The commodities markets are subject to temporary distortions or other disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators and government regulation and intervention. These circumstances could adversely affect the price of futures contracts and, therefore, the performance of the Contag Beta Indices and the Index Level.

5        *Backwardation Seeking*

The Selection Methodology is based on a principal known as “backwardation seeking”. There can be no guarantee that Futures Contracts selected according to such a principal and employing such a mechanism as used in the Selection Methodology will exhibit superior returns to Futures Contracts selected on any other basis.

6        *Investment in deferred Futures Contracts*

Contag Beta Indices are synthetically exposed to the Futures Contracts selected as the Contag Contracts by the Selection Methodology and such Futures Contracts may, in general, be deferred Futures Contracts (i.e., those contracts having a Delivery Month further dated than the Futures Contract with the nearest Delivery Month). It is generally expected that such deferred Futures Contracts may have less liquidity than the near-month Futures Contracts (those being the nearest-to-deliver) with respect to the same Eligible Commodities. Additionally, deferred Futures Contracts may be less well correlated with the spot market (physical) prices of the relevant Eligible Commodities and exhibit different levels of volatility.

7        *Diversification*

Diversification is generally considered to reduce the amount of risk associated with generating returns, however can be no assurance that Contag Beta Indices will be sufficiently diversified at any time to reduce or minimize such risks to any extent.

8.       *Index Calculation Agent discretion*

The Index Calculation Agent is entitled to exercise certain discretions in relation to Contag Beta Indices, including but not limited to, the determination of the values to be used in the event of Market Disruptions and the interpretation of these Rules. Although the Index Calculation Agent will make all determinations and take all action in relation to Contag Beta Indices acting in good faith, such discretion could have an impact, positive or negative, on the Index Level.

9.       *Potential Conflicts of Interest*

Potential conflicts of interest may exist in the structure and operation of Contag Beta Indices and the conduct of normal business activities by any Relevant Person.

The foregoing list of risk factors is not intended to be exhaustive. Anyone reading these Rules should seek such advice as they consider necessary from their professional advisors, legal, tax or otherwise, without reliance on any Relevant Person to satisfy themselves that they fully understand these Rules and the risks associated with Contag Beta Indices.

J.P. Morgan Contag  
Module B(i): J.P. Morgan Contag Beta Full  
Energy Excess Return Index and the J.P.  
Morgan Contag Beta Light Energy Excess  
Return Index

September 2009, updated June 2011

**J.P.Morgan**

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## 1. Contag

Contag refers to a methodology for selecting Futures Contracts (the “Selection Methodology”) and several strategies developed by J.P. Morgan (the “Contag Indices”) that utilise this methodology. The Selection Methodology uses the slope of the futures curve of certain specified commodities in order to select a particular Futures Contract in respect of each commodity in which to synthetically gain exposure. The Selection Methodology aims to select a Futures Contract with the highest level of Local Backwardation subject to certain constraints, all as further explained the document “J.P. Morgan Contag Module A: Selection Methodology”.

## 2. This Document

This document, Module B(i) (*J.P. Morgan Contag Beta Full Energy Excess Return Index and the J.P. Morgan Contag Beta Light Energy Excess Return Index*), explains the J.P. Morgan Contag Beta Full Energy Excess Return Index (“Contag Beta FE”) and the J.P. Morgan Contag Beta Light Energy Excess Return Index (“Contag Beta LE”), each a Contag Beta Index. By itself this document does not define an index or product. This document provides the Externally Specified Particulars required for the calculation of each of Contag Beta FE and Contag Beta LE.

This document should be read in conjunction with the documents “J.P. Morgan Contag Module A: Selection Methodology” (the “Selection Methodology Document”) and “J.P. Morgan Contag Module B: J.P. Morgan Contag Beta Indices” (the “Beta Index Document”) and together they comprise the rules (the “Rules”) of the J.P. Morgan Contag Beta Full Energy Excess Return Index and the J.P. Morgan Contag Beta Light Energy Excess Return Index. These Rules may be amended or supplemented from time to time at the discretion of the Index Sponsor and will be re-published no later than thirty (30) calendar days following such amendment or supplement. The Index Sponsor will publish information in relation to the Relevant Eligible Commodities, Commodity Weights or Weights Periods and other such information which is updated in accordance with the Rules as set out below.

These Rules are published by J.P. Morgan Securities Ltd. (“JPMSL”) of 125 London Wall, London EC2Y 5AJ, UK in its capacity as Index Sponsor. A copy of the Rules is available from the Index Sponsor.

ALL PERSONS READING THIS DOCUMENT SHOULD REFER TO THE DISCLAIMERS AND CONFLICTS SECTIONS SET OUT BELOW AND CONSIDER THE INFORMATION CONTAINED IN THIS DOCUMENT IN LIGHT OF SUCH DISCLAIMERS AND CONFLICTS.

NOTHING HEREIN CONSTITUTES AN OFFER TO BUY OR SELL ANY SECURITIES, PARTICIPATE IN ANY TRANSACTION OR ADOPT ANY INVESTMENT STRATEGY OR LEGAL, TAX, REGULATORY OR ACCOUNTING ADVICE.

Each of the Index Sponsor, the Index Calculation Agent, and their affiliates may have positions or engage in transactions in securities or other financial instruments based on or indexed or otherwise related to Contag Beta FE and Contag Beta LE.

## 3. Definitions

Capitalised terms used in this document should be interpreted according to the definitions given below. All terms listed under the Definitions section in either the Selection Methodology Document or the Beta Index Document shall be deemed to have the same meaning in this document. In the event of a conflict between the definitions used in the Selection Methodology Document, the Beta Index Document and this document, the terms used herein shall prevail.

Contract Production Weights	has the meaning given in the S&P GSCI Methodology.
Designated Contract	has the meaning given in the S&P GSCI Methodology.
Relevant Eligible Commodities	means the Eligible Commodities which correspond to the Designated Contracts used in the calculation of S&P GSCI™ Index or the S&P GSCI™ Light Energy Index.



S&P Index Sponsor	means Standard and Poor's, a division of the McGraw-Hill Companies, Inc.
S&P GSCI™ Family-Index	means either of the S&P GSCI™ Index and the S&P GSCI™ Light Energy Index.
S&P GSCI Methodology	means the document setting out the rules of the S&P GSCI™ Indices entitled "S&P GSCI™ Index Methodology" as updated, modified and superceded from time to time by the S&P Index Sponsor.  At the time of publication of this document the relevant edition is dated February 2009 Edition, a copy of which can be found at <a href="http://www2.standardandpoors.com/spf/pdf/index/SP_GSCI_Methodology_Web.pdf">http://www2.standardandpoors.com/spf/pdf/index/SP_GSCI_Methodology_Web.pdf</a> .
S&P GSCI Period	has the meaning given in the S&P GSCI Methodology.

#### 4. Overview

Contag Beta FE and Contag Beta LE each reflect the return of synthetic exposure in an investment in the Relevant Eligible Commodities following the Selection Methodology described in the Selection Methodology Document to determine the Contag Contracts to which each Index gains exposure. Subject to the occurrence or existence of a Market Disruption, the Index Calculation Agent shall calculate and publish the Index Level in respect of each Dealing Day in accordance with the methodology specified in the Beta Index Document.

Contag Beta FE aims to achieve a long-only synthetic exposure to commodity futures contract prices, with Commodity Weights for the Relevant Eligible Commodities equal to the Contract Production Weights for the relevant Designated Contract of the S&P GSCI™ Index (Bloomberg ticker: SPGCCIP Index).

Contag Beta LE aims to achieve a long-only synthetic exposure to commodity futures contract prices, with Commodity Weights for the Relevant Eligible Commodities equal to the Contract Production Weights for the relevant Designated Contract of the S&P GSCI™ Light Energy Index (Bloomberg ticker: SPGCLEP Index).

The difference between Contag Beta FE and Contag Beta LE is the way in which the Commodity Weights are determined, as described above and in Section 5 (*Externally Specified Particulars: Contag Beta FE*) and Section 6 (*Externally Specified Particulars: Contag Beta LE*) below.

#### 5. Externally Specified Particulars: Contag Beta FE

The Externally Specified Particulars in respect of Contag Beta FE are shown in Table 1 (*Externally Specified Particulars in respect of Contag Beta FE*) below:

<i>Externally Specified Particular</i>	<i>Definition in respect of Contag Beta FE (in this table the "Index")</i>
Commodity Weights	The Commodity Weight of each Eligible Commodity in the Index is equal to the Contract Production Weight of the relevant Designated Contract in the S&P GSCI™ Index (Bloomberg ticker: SPGCCIP Index) for the S&P GSCI Period corresponding to the relevant Weights Period for the Index, as specified in the S&P GSCI Methodology
Initial Index Day	30th December 1994
Initial Index Level	100
Index Name	J.P. Morgan Contag Beta Full Energy Excess Return Index
Index Ticker	JCTABFEE
Roll Period Starting Day	1
Roll Period Length	10
Weights Periods	The Weights Periods are equal to the S&P GSCI Periods of the S&P GSCI™ Index, with the modification that each Weights Period of Index is from and including the first calendar day of the first month of

	the S&P GSCI Period to and including the last calendar day of the month immediately preceding the last day of the S&P GSCI Period
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**Table 1: Externally Specified Particulars in respect of Contag Beta FE**

6. Externally Specified Particulars: Contag Beta LE

The Externally Specified Particulars in respect of Contag Beta LE are shown in Table 2 (*Externally Specified Particulars in respect of Contag Beta LE*) below:

<i>Externally Specified Particular</i>	<i>Definition in respect of the Contag Beta LE (in this table the "Index")</i>
Commodity Weights	The Commodity Weight of each Eligible Commodity in the Index is equal to the Contract Production Weight of the relevant Designated Contract in the S&P GSCI™ Light Energy Index (Bloomberg ticker: SPGCLEP Index) for the S&P GSCI Period corresponding to the relevant Weights Period for the Index, as specified in the S&P GSCI Methodology
Initial Index Day	30th December 1994
Initial Index Level	100
Index Name	J.P. Morgan Contag Beta Light Energy Excess Return Index
Index Ticker	JCTABLEE
Roll Period Starting Day	1
Roll Period Length	10
Weights Periods	The Weights Periods are equal to the S&P GSCI Periods of the S&P GSCI™ Index, with the modification that each Weights Period of Index is from and including the first calendar day of the first month of the S&P GSCI Period to and including the last calendar day of the month immediately preceding the last day of the S&P GSCI Period

**Table 2: Externally Specified Particulars in respect of Contag Beta LE**

7. Regular amendments to Commodity Weights

The Commodity Weights in respect of each of Contag Beta FE and Contag Beta LE (together, in this document, the "Contag Beta FE and LE Indices") are determined by reference to the Contract Production Weights as specified in the S&P GSCI Methodology and as detailed above. The Commodity Weights for the Contag Beta FE and LE Indices are expected to change on an annual basis in line with the frequency with which the Contract Production Weights are routinely updated by the Index Sponsor in respect of each S&P GSCI™ Family-Index. Furthermore, from time to time the S&P Index Sponsor may change the Contract Production Weights on an intra-annual basis, in which case a new S&P GSCI Period will begin. Corresponding changes will be made by the Index Sponsor to the Weights Period for the Contag Beta FE and LE Indices. The Commodity Weights for the Contag Beta FE and LE Indices in respect of a given Weights Period will always be equal to the Contract Production Weights in respect of the corresponding S&P GSCI Period.

8. Changes to the Relevant Eligible Commodities

8.1 Amendment to Relevant Eligible Commodities

In the event that a Designated Contract is added to or removed from the calculation of either S&P GSCI Family-Index corresponding changes shall be made by the Index Sponsor to the Relevant Eligible Commodities contained in the Contag Beta FE and LE Indices. Such amendments shall be published by the Index Sponsor and shall be effective for the Weights Period corresponding to the S&P GSCI Period in respect of which such Designated Contract is added or removed from the calculation of such S&P GSCI Family-Index.

8.2 Addition of Eligible Commodities

In the event that a Designated Contract is added to the calculation of either S&P GSCI Family-Index that is not currently in the set of Eligible Commodities, such Designated Contract (the "New Eligible Commodity") will be considered an Eligible Commodity for the purposes of calculating the Contag Beta FE and LE Indices, effective as of the Weights Period corresponding to the S&P GSCI Period for which the addition is set to take effect in the relevant S&P GSCI Family-Index. All details relating to such New Eligible Commodity necessary for the purposes

of carrying out the Selection Methodology (for example the Liquid Contract Months) shall be published by the Index Sponsor.

## 9. Modifications to or Cancellation of the S&P GSCI™ Index and the S&P GSCI™ Light Energy Index

### 9.1

If either S&P GSCI Family-Index is (a) not calculated and announced by the S&P Index Sponsor but is calculated and announced by a successor sponsor acceptable to the Index Sponsor, or (b) replaced by a successor index using, in the determination of the Index Sponsor, the same or substantially similar formula for and method of calculation as used in the calculation of such S&P GSCI Family-Index, then such index will be deemed to be the index so calculated and announced by that successor index sponsor or that successor index, as the case may be.

### 9.2

If on or prior to any Dealing Day on which the Index Calculation Agent is determining the Index Level of either of the Contag Beta FE and LE Indices the S&P Index Sponsor makes a material change in the formula for or the method of calculating the relevant S&P GSCI Family-Index (other than a modification prescribed in that formula or method to maintain such index in the S&P GSCI Family-Index or prescribed routine events) which affects the ability of the Index Calculation Agent to define an Externally Specified Particular in respect of either of the Contag Beta FE and LE Indices, then the Index Sponsor shall, in good faith, make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, Externally Specified Particular or any other rule in relation to the Contag Beta FE and LE Indices to account for such modification.

### 9.3

If on or prior to any Dealing Day on which the Index Calculation Agent is determining the Index Level of either of the Contag Beta FE and LE Indices the S&P Index Sponsor permanently cancels either S&P GSCI Family-Index, and no successor index exists, the Index Sponsor shall, in good faith, either:

- (i) ensure that the Index Calculation Agent continues to calculate the Index Level of the relevant Contag Beta FE and LE Indices using the latest available Externally Specified Particulars at the time the S&P GSCI Family-Index was cancelled; or
- (ii) make such adjustment(s) that it determines to be appropriate to any variable, calculation, methodology, valuation terms or any other rule in relation to the Contag Beta FE and LE Indices to account for such cancellation.

## 10. Responsibility of the Index Sponsor and Index Calculation Agent

The Index Calculation Agent's determinations in respect of the Contag Beta FE and LE Indices and interpretation of the Rules shall be final.

The Index Sponsor and the Index Calculation Agent shall act in good faith and in a commercially reasonable manner.

Whilst these Rules are intended to be comprehensive, ambiguities may arise. In such circumstances the Index Calculation Agent and the Index Sponsor will resolve such ambiguities in a reasonable manner and, if necessary, the Index Sponsor will amend these Rules to reflect such resolution. The Index Sponsor will publish information in relation to the Relevant Eligible Commodities, Commodity Weights or Weights Periods and other such information which is updated in accordance with the Rules as set out above.

None of the Index Sponsor, the Index Calculation Agent nor any of their respective affiliates or subsidiaries or any of their respective directors, officers, employees, delegates or agents (each a "Relevant Person") shall have any responsibility to any person (whether as a result of negligence or otherwise) for any determinations made or anything done (or omitted to be determined or done) in respect of the Contag Beta FE and LE Indices or in respect of the publication of the Index Level (or failure to publish such level) and any use to which any person may put the Contag Beta FE and LE Indices or the Index Levels. All determinations of the Index Calculation Agent and the Index Sponsor in respect of the Contag Beta FE and LE Indices shall be final, conclusive and binding and no person shall be entitled to make any claim against any of the Relevant Persons in respect thereof. Once a determination or calculation is made or action taken by the Index Calculation Agent, the Index Sponsor or any other Relevant Person in respect of the Contag Beta FE and LE Indices, none of the Index Sponsor, the Index

Calculation Agent nor any other Relevant Person shall be under any obligation to revise any determination or calculation made or action taken for any reason.

#### 11. Corrections

In the event that (a) the Contract Price of any Futures Contract used to calculate the Index Level in respect of any Dealing Day is subsequently corrected and the correction is published by the Relevant Exchange before the next following Roll Period or (b) the Index Calculation Agent identifies an error or omission in any of its calculations or determinations in respect of the Contag Beta FE and LE Indices, then the Index Calculation Agent may, if practicable and the correction is deemed material by the Index Sponsor, adjust or correct the Index Level published in respect of the relevant Dealing Day and each subsequent Dealing Day and publish such corrected Index Level(s) as soon as reasonably practicable.

#### 12. Notices, Disclaimers and Conflicts

None of the Index Sponsor, the Index Calculation Agent nor any Relevant Person shall have any liability, contingent or otherwise, to any person or entity for the quality, accuracy, timeliness or completeness of the information or data contained in the Rules or the Contag Beta FE and LE Indices, or for delays, omissions or interruptions in the delivery of the Contag Beta FE and LE Indices or related data. None of the Index Sponsor, the Index Calculation Agent nor any Relevant Person makes any warranty, express or implied, as to the results to be obtained by any person or entity in connection with any use of the Contag Beta FE and LE Indices, including but not limited to the trading of or investments in products based on or indexed or otherwise related to the Contag Beta FE and LE Indices, any data related thereto or any components thereof. None of the Index Sponsor, the Index Calculation Agent nor any Relevant Person makes any express or implied warranties, and hereby expressly disclaims, to the fullest extent permitted by law, all warranties of merchantability or fitness for a particular purpose or use with respect to the Rules, the Contag Beta FE and LE Indices or any data related thereto. Without limitation any of the foregoing, in no event shall any of the Index Sponsor, the Index Calculation Agent either JPMSL or any Relevant Person have any liability for any special, punitive, indirect or consequential damages (including lost profits), in connection with any use by any person of the Contag Beta FE and LE Indices or any products based on or indexed or otherwise related thereto, even if notified of the possibility of such damages.

The Index Calculation Agent is under no obligation to continue the calculation, publication and dissemination of any of the Contag Beta FE and LE Indices or any Index Level.

During the course of their normal business, the Index Sponsor, the Index Calculation Agent or any other Relevant Person may enter into or promote, offer or sell transactions or investments (structured or otherwise) linked to the Contag Beta FE and LE Indices and/or any of the Futures Contracts. In addition, any Relevant Person may have, or may have had, interests or positions, or may buy, sell or otherwise trade positions in or relating to the Contag Beta FE and LE Indices or any of the Futures Contracts, or may invest or engage in transactions with other persons, or on behalf of such persons relating to any of these items. Such activity may or may not have an impact on the Index Levels but all persons reading these Rules should be aware that a conflict of interest could arise where anyone is acting in more than one capacity. None of the Index Sponsor, the Index Calculation Agent nor any other Relevant Person has any duty to consider the circumstances of any person when participating in such transactions or to conduct themselves in a manner that is favourable to any person.

It should be noted that the Rules have been developed with the possibility of the Index Sponsor, the Index Calculation Agent or any of the Relevant Persons entering into or promoting, offering or selling transactions or investments (structured or otherwise) linked to the Contag Beta FE and LE Indices, and hedging the obligations that might arise under any such transactions or investments. Accordingly it should be assumed that these Rules have and will be analysed from this point of view.

It should be noted that the Contag Beta FE and LE Indices are described as a notional portfolio of assets because there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. The Contag Beta FE and LE Indices merely identify certain assets in the market, the performance of which will be used as a reference point for the purposes of calculating the Index Levels.

There is no obligation upon the Index Calculation Agent to publish the Index Levels by any alternative method if the relevant Index Ticker (as identified above) is subject to any delay in or interruptions of publication or any act of God, act of governmental authority, or act of public enemy, or due to war, the outbreak or escalation of hostilities, fire, flood, civil commotion, insurrection, labour difficulty including, without limitation, any strike, other work

stoppage, or slow-down, severe or adverse weather conditions, power failure, communications line or other technological failure may occur or any other event beyond the control of the Index Calculation Agent.

No one may reproduce or disseminate the information contained in these Rules or the Index Levels without the prior written consent of the Index Sponsor. "J.P. Morgan Contag Beta Full Energy Excess Return Index", "J.P. Morgan Contag Beta Light Energy Excess Return Index", "Contag Beta FE and LE Indices" and "J.P. Morgan Contag" are the intellectual property of the Index Sponsor and may only be used (as an underlying for financial products or otherwise) by third parties who have entered into a license agreement with the Index Sponsor. These Rules are not intended for distribution to, or use by any person in, a jurisdiction where such distribution is prohibited by law or regulation.

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