



International Swaps and Derivatives Association, Inc.

General Disclosure Statement for Transactions

I. INTRODUCTION

We are providing you with this General Disclosure Statement for Transactions (“**General Disclosure Statement**”), which describes generally: (1) the material characteristics of a wide variety of Transactions (as defined below) that we may conduct with you; (2) the material risks of such Transactions; and (3) typical material incentives and conflicts of interest that we may have with respect to such Transactions. These Transactions may relate to Underliers (as defined below) related to one or more of the following classes of reference assets: interest rates, foreign exchange rates and currencies, credit instruments, asset-backed instruments, equities, and commodities. In addition, we may provide you with additional disclosure statements for Transactions in each of these Underliers to supplement the information provided herein, as well as Transaction-specific disclosures in connection with particular Transactions. This General Disclosure Statement should be read in conjunction with such disclosures.

Please note that Transactions may give rise to significant risks and are intended primarily for knowledgeable and sophisticated parties that are willing to accept such risks and able to absorb the losses that may arise. Therefore, it is important that you or the person exercising discretion on your behalf understand these risks before entering into any Transactions, regardless of your level of prior experience in financial transactions or instruments.

In this General Disclosure Statement and any supplemental disclosure statement that expressly refers to this General Disclosure Statement:

- “we”, “our”, “ours”, and “us” refer to the provider of this General Disclosure Statement and each affiliate that may conduct Transactions with you, except that for purposes of Section IV only, such terms include all of our affiliates;
- “you”, “your” and “yours” refer to each of the persons to which this General Disclosure Statement is delivered or addressed in connection with entering into, executing or agreeing upon the terms of Transactions with us, as indicated in any written or electronic transmittal of the same;
- “Covered Derivative” means (i) a swap, foreign exchange swap, or foreign exchange forward (each as defined in Section 1a of the Commodity Exchange Act and rules thereunder), or (ii) a mixed swap (as defined in Sections 1a of the Commodity Exchange Act and 3(a) of the Securities Exchange Act and rules thereunder);

- “Transaction” means a transaction entered into, executed or agreed between us that in any such case is a Covered Derivative or a security-based swap (as defined in Section 3(a) of the Securities Exchange Act and rules thereunder);
- “Transaction Economics” means the value of a Transaction, its usefulness for your intended purpose, the timing or amount of payments or deliveries and, if applicable, the likelihood that you will be able to exercise any option rights;
- “Underlier” means any rate (including interest and foreign exchange rates), currency, commodity, security, instrument of indebtedness, index, quantitative measure, occurrence or nonoccurrence of an event, or other financial or economic interest, or property of any kind, or any interest therein or based on the value thereof, in or by reference to which any payment or delivery under a Transaction is to be made or determined;
- the words “include”, “includes” and “including” shall be deemed to be followed by the phrase “without limitation”; and
- the phrase “otherwise agreed” shall be deemed to be followed by the phrase “expressly in writing”.

We are providing this General Disclosure Statement and, if applicable, any related supplemental disclosure statements pursuant to certain rules of the Commodity Futures Trading Commission (“CFTC”) that relate to Covered Derivatives. The fact that this General Disclosure Statement or any supplemental disclosure statement describes, or discusses considerations relevant to, a type of transaction should not be construed as having any implications for the characterization of that type of transaction as a Covered Derivative or a security-based swap or its characterization under securities, bankruptcy or any other laws. You should not construe the content of this General Disclosure Statement as legal, financial, tax, accounting or other advice. More generally, unless expressly agreed in writing, we are not providing you with legal, financial, tax, accounting, or other advice in connection with any Transactions or any Underliers, and you should consult your own attorney, financial advisor, tax advisor or accountant as to legal, financial, tax, accounting and related matters concerning any Transactions, including the impact on your business and the requirements and results of conducting Transactions.

Before entering into any Transaction, you (or any agent you employ for such purpose) should conduct a thorough and independent evaluation of the terms of the Transaction in light of your particular circumstances and the nature and extent of your exposure to risk. You should also consider whether the Transaction is appropriate for you in light of your experience, objectives, financial and operational resources and other relevant circumstances. If you are acting as an advisor or agent, you should evaluate these considerations in light of circumstances applicable to your principal and the scope of your authority.

NOTHING IN THIS GENERAL DISCLOSURE STATEMENT AMENDS OR SUPERSEDES THE EXPRESS TERMS OF ANY TRANSACTION BETWEEN YOU AND US OR ANY RELATED GOVERNING DOCUMENTATION. Accordingly, descriptions in this General Disclosure Statement of the operation of Transactions and the consequences of various events

are in all cases subject to the actual terms of a Transaction executed between you and us and its governing documentation (whether or not such qualification is expressly stated).

II. GENERAL CHARACTERISTICS

A. Arm's length contractual counterparty to Transactions

Unless otherwise agreed, we are acting in the capacity of an arm's length contractual counterparty to you in connection with the Transaction and do not undertake to act as your financial or other advisor (including a "municipal advisor" within the meaning of Section 15B of the Securities Exchange Act), agent, representative, or fiduciary. Accordingly, unless we have agreed to act in one of the foregoing roles you should:

- not regard any Transaction proposals, suggestions or other written or oral communications from us as advice or a recommendation or otherwise as expressing our view as to whether a Transaction is appropriate for you or meets your financial or other objectives;
- determine whether you have the necessary information to understand the terms and risks of a Transaction and the legal, tax and accounting requirements and results of entering into the Transaction; and
- assume we have an economic incentive to be a counterparty to any Transaction with you.

We and/or our affiliates may engage in business with you in capacities other than as counterparty to Transactions. Such other capacities might include acting as your broker or futures commission merchant in executing orders for securities or futures contracts, providing clearing or custody services, acting as a lender, providing banking services to you, acting as underwriter, placement or remarketing agent with respect to securities issued or purchased by you, managing investments, acting as a municipal advisor, collateral valuation agent, data provider or any of the other relevant capacities in which we or an affiliate may act in financial or commercial markets, as described in Section IV.A below.

There are important differences in the nature of our relationship when we act as counterparty to Transactions, as distinguished from the various other capacities in which we or our affiliates may act. As counterparty to Transactions, we enter into the Transactions as principal, and our interests are directly adverse to yours when we negotiate the terms of a Transaction or related documentation, or make determinations or exercise our rights thereunder. In contrast, in some other capacities, the primary purpose of our or our affiliate's relationship with you may be to facilitate your transacting with other parties as principal, provide advice, or hold financial assets on your behalf. We or an affiliate may also act as your counterparty in contractual arrangements that are not Transactions. In such cases, other applicable laws, regulations, internal policies or procedures, or rules of a self-regulatory organization may govern matters such as the handling and execution of orders, standards of care, disclosure of information, conflicts

of interest, fees and compensation or the segregation and control of assets held for safekeeping on your behalf. The duties and standards to which we or an affiliate are subject when acting in such other capacities may differ materially from those that apply when we act as counterparty to Transactions, and may (or may not) afford substantially greater protections to you. **When we act in a particular capacity, we shall have only the duties and responsibilities that pertain specifically to that capacity.**

If you believe you need assistance in evaluating and understanding the terms or risks of a Transaction or the legal, tax and accounting requirements and results of entering into the Transaction, you should consult appropriate advisors.

B. You should review carefully each Transaction’s particular structure, including terms incorporated by reference

The Transactions result from agreements between two “counterparties” and generally involve an exchange or a series of exchanges of payments or deliveries, which may be calculated by reference to a notional or principal amount or quantity and a price, value, level or rate of return of one or more Underliers. The Transactions may be structured in various forms including, but not limited to, forwards, swaps, options (including so-called vanilla and exotic options), swaptions, caps, floors, collars or variations of these components, as well as combinations of these components. You should be aware that there is risk associated with each component of a multi-component Transaction, as well as with the Transaction as a whole.

The confirmation or other communication evidencing a Transaction, or a governing master agreement, may incorporate by reference various standard definitions, annexes and supplements thereto, master confirmations and other market standard terms, which may in turn be amended or customized pursuant to the terms of a Transaction and its governing documentation. In some cases, the provisions of a prime brokerage agreement or the rules of a confirmation platform or other provider of execution, clearing, confirmation or portfolio compression services may deem certain provisions to be incorporated into Transactions entered into or processed through such arrangements or services. In the case of Transactions executed between us that are accepted for clearing (“**cleared Transactions**”), the rules, by-laws and procedures of the clearinghouse will govern the cleared Transaction and define its terms. Under certain circumstances, the specifications of outstanding cleared Transactions (such as the exercise price of an option) may be modified by the clearinghouse to reflect changes in the Underlier. Before entering into any Transaction, you should obtain and review carefully any such materials incorporated by reference and, in the case of cleared Transactions, the disclosures, if any, provided by your clearing broker and the relevant clearinghouses, as well as the applicable clearinghouse rules, by-laws and procedures, as their content could materially affect your rights and obligations under the Transaction, its value and its appropriateness for your particular objectives.

C. Transactions generally involve a variety of risks

The specific risks presented by a particular Transaction necessarily depend upon the terms of the Transaction and your circumstances. In general, however, all Transactions involve one or more of the following risks — credit risk, market risk, liquidity risk, funding risk, operational risk, legal and documentation risk, regulatory risk and/or tax risk. Each of these risks is discussed below in Section III of this General Disclosure Statement. The structures of the Transactions are frequently customized by the parties to accomplish specific financial, tax, accounting, or asset, liability or risk management objectives, and the resulting risks of each Transaction necessarily depend upon the terms of the Transaction and your present and future circumstances.

D. Value of the Transactions is derived from one or more Underliers and other market and economic factors

Depending upon the nature of the Transactions, payments and/or deliveries under the Transactions may be calculated by reference to one or more Underliers and may arise upon the occurrence of certain events or circumstances, the satisfaction of certain conditions, or the exercise of certain rights. The value of Transactions may depend on prices, values, or levels of the Underliers and other market and economic factors discussed in greater detail in Part III below.

The prices, values, or levels of an Underlier are determined in the market for that Underlier. You should be aware that each market for an Underlier has its own particular characteristics and risks, including, to the extent applicable, the market's institutional structure, trading rules, market practices, liquidity, governance, regulation (or lack thereof) and participants. The terms of a Transaction may refer to such features and allocate or otherwise provide for associated risks. Alternatively, there may be known or anticipated eventualities that could affect a market that are not provided for in the terms of a Transaction or its governing documentation. Before you enter into any Transaction, you should review the publicly available information regarding the market characteristics and risks pertaining to the relevant Underliers, review all the disclosure we have provided that is relevant to Transactions in such Underliers, and (as you may deem appropriate) consult advisors with specific expertise regarding the markets for such Underliers and the Transaction.

1. Past Performance

Neither we nor you can predict the future performance of an Underlier based on historical performance. The price, value, or level of the Underlier over the term of a Transaction may bear little or no relation to the historical price, value, or level of the Underlier. Prior observed patterns, if any, in the behavior of market variables, such as correlations, mean reversion or relationships between implied and realized values, may become unstable or break down. In addition, the source or method of determining the price, value, or level of the Underlier may be subject to change or cease to be available during the term of a Transaction, matters which may be addressed in the governing documentation.

If the Underlier for a Transaction is an index, the Underlier may not have a performance history. If we provide you with a hypothetical historical performance analysis of an index, you should be aware that any such analysis inherently involves assumptions, estimates and approximations. You should also understand that the future performance of the index is impossible to predict and therefore no future performance of the index or any Transaction may be inferred from any of the historical simulations. Hypothetical performance data are not indicative of, and have no bearing on, the potential performance of the index or any Transaction. See Part III.O below.

2. Different Currencies

For certain Transactions, the prices, values, or levels of the Underliers may be denominated in currencies other than the settlement or payment currency and may be converted to the settlement or payment currency for purposes of determining payments or deliveries to be made under the Transactions. Such Transactions will be exposed to currency exchange rate risk with respect to each of the currencies in which an Underlier or obligation is denominated. Your net exposure to this risk will depend on the extent to which the currencies of the Underliers for a relevant Transaction strengthen or weaken against the settlement currency or one another. Fluctuations in the currencies of the Underliers may adversely impact the values of the Transactions and the payments or deliveries to be made or received thereunder.

3. Changes in the components of baskets or indices

If the Underlier for a Transaction is a basket or index, the negative performance of one or more components of the basket or index may negate any positive performance of other components. For example, while the prices, values, or levels of some components may increase over the term of the Transaction, the prices, values, or levels of other components may not increase during the term of the Transaction as much or may decline. Therefore, in respect of the value of the Transaction or the amount of any payments or deliveries to be made under the Transaction, changes in the prices, value, or levels of one or more of the components may be moderated, or offset, by lesser changes or inverse changes in the prices, values, or levels of one or more of the other components. This effect may be further amplified by differing weights of each component. More heavily weighted components will have a larger impact on the value of the Transaction or the amount of any payments or deliveries to be made under the Transaction than components with lesser weightings.

E. Entering into a Transaction is not the same as owning the Underlier

Unless specifically provided for in the terms of a Transaction or governing documentation, a Transaction will not confer ownership rights in any Underlier, including without limitation any stock, fund, partnership interest, note, bond, security, loan or other instrument of indebtedness, foreign exchange rate, currency, commodity,

futures contract, or other asset, index or financial measure underlying a Transaction or underlying an index that is the Underlier for a Transaction. Thus, your Transaction will not confer voting rights, rights to receive interest, dividends or other distributions, rights to approve a restructuring or plan of reorganization, enforcement rights, transfer rights or any other rights or residual interest that having an ownership interest in the Underlier would confer, unless otherwise agreed.

The exposure of an index to its components is purely notional and will exist solely in the records maintained by or on behalf of the index calculation agent. With an index, there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. Unless specifically provided for under the terms of a Transaction or governing documentation, a counterparty to a Transaction with an index Underlier will not have the rights that investors in the components have and will not own or have any beneficial or other legal interest in, or be entitled to any rights with respect to, any of the index components.

F. The economic return of a Transaction may not be the same as the return from the Underlier

The mathematical relationship between the payments and deliveries under a Transaction and the price, level or value of the Underliers will be specified under each Transaction or its governing documentation, and in general there is no reason to expect that the return from entering into the Transaction will resemble that of an investment in the Underlier. Even if a Transaction is a total return swap, contract for differences, credit default swap, or similar instrument that you have entered into for the purpose of obtaining the equivalent of a long or short position in or exposure to an Underlier, the economic return of the Transaction may not be the same as the return from the Underlier. Such divergences may occur due to a variety of factors, including, but not limited to:

- Payments or deliveries under a Transaction may be determined based on the prices, values, or levels of the Underlier only at specified observation or valuation times;
- The Transaction may apply interim compounding to rates of return observed for the Underlier over shorter periods than the term of the Transaction;
- The Transaction terms may include or reflect an adjustment for fees or commissions, financing charges, hedging costs or breakage costs;
- The tax or accounting treatment, and the legal requirements or results, of the Transaction may differ significantly from owning the Underlier;
- The Transaction may not provide the same flexibility for unwinding the Transaction as direct ownership of the Underlier would allow in deciding when and how to dispose of the Underlier;

- The price source or valuation methodology under the Transaction may yield a different value than would be realized by disposing of the Underlier in financial or physical markets for such Underlier;
- The Transaction may include optionality, cancellation, “barrier,” leverage or other similar features that may give disproportionate effect to changes in prices, values, or levels or other factors; and/or
- The Transaction may contain terms providing for adjustments, early termination or cancellation due to corporate events, disruption of our ability to hedge in relevant markets, changes in law or other extraordinary events.

Accordingly, changes in prices, values, or levels of an Underlier may not result in a comparable payment or delivery under, or change in the value of, the corresponding Transaction. If the price, value, or level of the Underlier for a Transaction has increased on any day, the value of the Transaction on such day may not increase comparably, if at all. It is also possible for the price, value, or level of an Underlier to increase while the value of the Transaction declines and exposes you to substantial economic losses.

A Transaction and related Underlier may be priced in separate markets, and the values of the Transaction and Underlier may diverge for significant periods or indefinitely. Also, models we use to value Transactions, including methodologies, assumptions and inputs to those models, may change, which could cause a change to the value we attribute to the Transaction without necessarily affecting the value of the Underlier.

G. No assurance of Transactions providing you with a desired return or result

Unless the terms of the Transaction expressly guarantee a stated return, there is no assurance that a Transaction will provide you with a positive or anticipated return or achieve your objectives. It is impossible to predict whether and the extent to which the underlying rates, prices, assets, indices, or other Underliers relevant to a particular Transactions will rise or fall. The levels or performance of relevant rates, prices, assets, indices, or other Underliers may be influenced by complex and interrelated political, economic, financial and other factors.

You should be willing to accept the risk of exposure to the levels or performance of such rates, prices, assets, indices, or other Underliers and the risk of suffering substantial economic losses from or in connection with the Transactions, which may require you to make a payment to us. Even if the Transactions provide you with a positive or anticipated return, the return on the Transactions may be inferior to returns available in connection with other Transactions that you could have entered into or other arrangements that you could have made, including owning the Underliers.

H. No assurance of Transactions achieving your desired hedging objectives

In some cases, you may enter into Transactions to hedge, reduce or otherwise manage price or other risks to which you or your affiliates are exposed through owning an asset,

owing a liability or being a party to other transactions or anticipated transactions. There may be imperfect correlation (sometimes referred to as “basis risk”) between changes in the value of a Transaction and the particular exposures you wish to hedge, and the amount of basis risk may increase over time. You may also be exposed to risk as a result of differences in legal documentation between a Transaction and the particular exposure you wish to hedge, including differences in how the Underlier is defined under the hedged item and the definition applicable to the Transaction, or as a result of differences in the dates or times as of which prices, values or levels are to be determined for the hedged item versus the Transaction.

In addition, the notional amount of a Transaction may not remain matched to the amount of exposure you wish to hedge, as would be the case, for example, if an anticipated investment, purchase, sale, acquisition, disposition or other transaction does not occur, or a loan or bond is pre-paid or called. Unless otherwise agreed, we have no obligation to terminate or modify any Transaction in response to these or other changes in your circumstances or to accommodate your hedging strategies or needs. You should carefully review the risks of entering into a Transaction before you acquire an asset, liability or other item to be hedged and the risks of any prepayment, liquidation or other disposition of an asset, liability or other hedged item before the Transaction matures.

Hedging entails economic costs reflected in the pricing of Transactions, which can be significant. Although a hedge Transaction may be structured such that no upfront purchase price is payable, you should understand that significant potential amounts could become payable for modifying the Transaction or terminating it early, depending upon then existing market conditions, as described in this General Disclosure Statement. So-called “zero cost” or “reduced premium” hedges may contain embedded options granted by you. Losses from such embedded options may be substantial and potentially unlimited and may not be matched by realizable gains from the exposures that you intended to hedge. In some cases, the terms of a Transaction may take account of events that are particular to your specific hedging circumstances, such as in a “deal-contingent hedge” under which the rights and obligations depend expressly on the outcome, for example, of a corporate acquisition transaction within specified time periods. In such Transactions, the cost of such application-specific features may be reflected in spreads or pricing terms that differ from market rates for otherwise comparable Transactions that do not include such features.

I. Termination of Transactions

Under the relevant governing documents, a Transaction and potentially our entire relationship may be subject to early termination upon the occurrence of events that may be characterized as “events of default” or “termination events” (some examples of which might include failures to pay, insolvency, force majeure or illegality) in relation to you, us, and/or any guarantor or other credit support provider. Certain Transactions may also be subject to early termination upon the occurrence of extraordinary events specified in the terms of such Transactions or governing documents (some examples of which might include disruption of our ability to hedge due to, among other things, illegality resulting from a change in law or a material increase in the cost of hedging as a result of taxes,

duties, expenses or fees in connection with such hedging; cancellation or modification of an index Underlier; market disruptions; extraordinary events with respect to an underlying issuer, such as mergers, nationalization, insolvency or delistings; and the price of an Underlier, including an index Underlier, falling below or rising above a predetermined level), or may provide an optional early termination right for one or both of the parties. The event or events giving rise to a right of termination may be outside your control and may occur at a time when the price, level or value of the Underlier, or the value of the Transaction otherwise, is such that you would owe a substantial termination payment. You may owe this termination payment even if we are the defaulting party. Additionally, if the Transaction terminates early, you may not be able to establish, or may incur costs in establishing, substitute arrangements for the Transaction.

We have no obligation to consider your interests in determining whether or when to terminate the Transactions following one of these or other events that entitle us to terminate Transactions. Termination and the corresponding determination of a termination amount could occur at a time when the relevant markets are volatile, illiquid or not functioning in accordance with normal market conditions.

If we determine an early termination amount, we may take into account, subject to the terms of the Transaction and other governing documentation, our and your creditworthiness, our funding costs, hedging or hedge unwind costs (which may include costs related to the failure of a custodian or hedge counterparty), loss of bargain, relevant documentation terms, market data from internal sources and other factors. Such determinations may involve subjective judgment and uncertainty, which may adversely affect the Transaction Economics. Termination amounts may differ significantly from daily marks or values used for collateral delivery purposes.

The treatment of Transactions in your or our insolvency may be more favorable to us than the treatment of alternative arrangements you might have entered into to achieve the same economic objective. For instance, if you are the subject of a US Bankruptcy Code proceeding, Transactions between you and us may qualify for special treatment intended to, among other things, facilitate prompt termination and access to collateral.

J. General characteristics of variance- and volatility-linked Transactions

Variance-linked Transactions

Variance is generally a measure of how widely dispersed the data points in a given data set are around their mean, or average, or around an assumed mean. The variance of the data points in a given data set is generally calculated by:

- (i) calculating the mean of the data points;
- (ii) determining by how much each single data point deviates from that mean;

- (iii) squaring that deviation in order to treat positive and negative deviations the same;
- (iv) calculating the sum of all the squared deviations; and
- (v) dividing that sum by the number of data points.

The result is the average squared deviation from the mean, which seeks to express, in a single number, the degree of variability of the data points in the applicable data set.

Under the terms of a variance-linked Transaction, variance will typically be calculated in a manner that is generally consistent with the description above, but with such specific terms and modifications as are specified for purposes of that Transaction. Because different variance-linked Transactions define variance in different ways, it is important to review and understand the manner in which variance is calculated under a particular variance-linked Transaction before entering into it.

A formula for the calculation of variance in a variance-linked Transaction will typically have the following components:

- *Specification of the data points to be observed.* The terms of the variance-linked Transaction will specify the price, level, rate or other value (collectively, the “**price**”) of the Underlier on which the variance calculation will be based, such as a rate, asset or index. You should be aware of several technical factors that may affect the price of the Underlier on any given observation date and, therefore, may affect the calculated variance:
 - Under the terms of certain variance-linked Transactions, if a disruption event (as defined under those terms) occurs on a date on which the price is to be observed, any published price may be disregarded and the calculation agent may have discretion to determine the price on that date. Any price so determined will be taken into account in the calculation of variance. If we are the calculation agent, we will have no obligation to take your interests into account in making that determination.
 - The Underlier may change over the term of the variance-linked Transaction in a way that affects its variance. For example, if the Underlier is an index, the index may be reconstituted periodically, which may result in new constituents with different variance characteristics than the original constituents of the index.
 - The publisher of the price may change the manner in which it calculates the price, and that change may tend to increase or decrease the variance of the price.
 - If the Underlier is traded on an exchange or other market, the exchange or market may impose price limits, which would tend to reduce variance if those price limits are reached.

- For certain Underliers or types of Underliers, there may be additional adjustments or events that could affect the calculation of variance or the prices used to calculate variance.
- *Observation period.* The variance of the Underlier will be measured at the specified observation intervals over a specified observation period. Relatively shorter observation periods and relatively longer observation periods each present their own risks. In general, a shorter observation period is more sensitive to the effects of sudden market shocks and the “volatility clustering” phenomenon, which is the tendency of days with unusually high percentage changes from the prior day to occur together, and vice versa. These sudden changes may have a significant effect on variance over a short-term period but may tend to be smoothed out over a longer period. While a longer period is less sensitive to short-term shocks, a longer period is subject to the greater uncertainty associated with a longer future time horizon and the greater potential for significant events that are unforeseeable at the time of entering into the variance-linked Transaction.
- *Observation interval.* The terms of the variance-linked Transaction will specify how frequently the price of the Underlier will be observed for purposes of the variance calculation. Daily observations are common, but the price may be observed weekly, monthly or with some other frequency. The variance of a given Underlier over a given observation period will likely differ, perhaps significantly, depending on the interval at which the price is observed.
- *Return.* Variance is typically calculated not by reference to the change in the absolute price of the Underlier, but rather by reference to the percentage change in the price over the relevant observation interval. This percentage change is typically expressed as a “log return,” which is calculated by applying the natural logarithm function to the ratio of one observed price to the prior observed price, rather than as a “simple return,” which is simply the percentage change from one observed price to the next. Although the log return and the simple return are similar for small changes from one observed price to the next, they will diverge from each other to a greater degree the greater the change. The log return is always less than the simple return. In the case of an increase from one observed price to the next, this means that, other relevant variables being constant, the log return would result in a lower variance than the simple return. In the case of a decrease from one observed price to the next, other relevant variables being constant, the log return would result in a greater variance than the simple return, because the lower log return would be more negative and, when squared, would produce a greater number than the square of the greater (but less negative) simple return.
- *Variability around actual or assumed mean.* Under many variance-linked Transactions, variance is calculated based on the variability of returns around an assumed mean of zero, rather than around the actual mean of the returns. If variance is calculated for a particular variance-linked Transaction based on the average of squared log returns rather than the average of the squared deviation of

each log return from the mean of log returns, then variance is being calculated with an assumed mean of zero.

If the actual mean of returns differs from zero, that may have a significant effect on the calculation of variance. Calculating variance with an assumed mean of zero will tend to produce a greater variance than if the actual mean were used—the more so the greater the difference between zero and the actual mean. If markets trend steadily in one direction or another, there is likely to be a difference between zero and the actual mean, and that difference will be greater the more steady and the more pronounced the trend. For example, a steady 1% daily increase in an Underlier price would result in an average deviation of 1% from an assumed mean of zero, but in an average deviation from the actual mean (which would be 1%) of 0%. Variance-linked Transactions with shorter observation periods are more likely to display a divergence of the actual mean from zero.

- *Average.* As discussed above, variance is the average of squared deviations from an actual or assumed mean. The average is calculated by dividing the sum of the squared deviations by a number commonly referred to under the terms of a variance-linked Transaction as “N” (or “N – 1”), which typically represents the expected number of observations that will occur over the observation period but may be a different number negotiated by the parties to the variance-linked Transaction. The terms of a variance-linked Transaction will specify whether an adjustment is made to N in the event of a disruption event.
 - Under certain variance-linked Transactions, N will not be adjusted if the actual number of observations turns out to be less than N (or N – 1, as applicable) as a result of disruption events that cause the price of the Underlier to be unavailable or otherwise disregarded for a given observation day. Instead, the price of the Underlier on the disrupted day may be assumed to be the same as it was on the previous non-disrupted day. This approach to disrupted days will tend to smooth returns and therefore reduce variance. Prolonged price disruptions may lead to a significant reduction in variance.
 - Under certain other variance-linked Transactions, if a disrupted day occurs, that day will be disregarded for purposes of the variance calculation and N will be reduced by 1. This approach to disrupted days may also affect the variance calculation, tending to reduce variance in circumstances where a significant decline on a disrupted day is followed by a recovery on the next non-disrupted day, and tending to increase variance where a significant decline on a disrupted day is followed by another significant decline on the next non-disrupted day.
- *Annualization.* Variance is typically expressed on an annualized basis. This is achieved by multiplying the average variance over the applicable observation interval by an annualization factor that represents the number of such observation

intervals expected to occur in one year, or that is otherwise negotiated by the parties to the variance-linked Transaction.

Variance risk may arise from many types of transactions, including Transactions referencing equities, credit, commodities, rates and foreign currencies. If your objective in entering into a variance-linked Transaction is to hedge other exposure that you have to variance risk, you should carefully compare the components of the formula for calculating variance under the variance-linked Transaction to the relevant characteristics of your other exposure. You should also be aware that otherwise similar variance-linked Transactions may use formulas for calculating variance that differ in material respects. To the extent there are differences between variance as calculated under a variance-linked Transaction and the variance risk that you seek to hedge, the effectiveness of the variance-linked Transaction for your hedging purpose may be limited. Furthermore, there can be no assurance that prior observed relationships, if any, between variance and your other exposure will continue. See II.H – “No assurance of Transactions achieving your desired hedging objectives” above.

The square root of variance is referred to as “volatility,” and variance is therefore equal to volatility squared. Because variance is volatility squared, the payoff on a variance-linked Transaction is a “convex” function of volatility. This means that a variance seller will experience accelerating losses the more volatility increases, and diminishing gains the more volatility decreases. If you are a variance seller, you will be exposed to the risks of convexity. In a time of a significant increase in volatility, a variance seller may be exposed to losses under a variance-linked Transaction that are disproportionate to the increase in volatility.

At any time during the term of a variance-linked Transaction, its value will reflect the actual realized variance up to that time and an expectation about variance over the remaining term of the variance-linked Transaction, which may be determined based on the variance implied in the price of market-traded instruments referencing the applicable Underlier at that time. The value of a variance-linked Transaction will also be affected by the extent to which implied variance in out-of-the-money options on the Underlier differs from implied variance in at-the-money options on the Underlier, which is commonly referred to as “skew.” In general, a greater skew will tend to increase the value of a variance-linked Transaction to a variance buyer, and a smaller skew will tend to increase the value of a variance-linked Transaction to a variance seller, and vice versa.

When we calculate the value of a variance-linked Transaction, our determination of implied variance may depend significantly on the methodologies and assumptions we use, and different parties using different methodologies or different assumptions may generate different values for the variance-linked Transaction. When we calculate the value of a variance-linked Transaction for any purpose, including in the event of early termination of a variance-linked Transaction, our interests will be adverse to yours. See IV.A.6 – “Conflicts of Interest and Material Incentives – Our financial market activities may adversely impact Transactions – Act as calculation agent, valuation agent, collateral agent, or determining party” below.

An important characteristic of the variance of an index or basket is that it will be determined not only by the variance of each of the underlying components of the index or basket, but also by the correlation among those components. Unless the individual components of an index or basket are perfectly correlated with each other, their fluctuations will tend to cancel each other out to a greater or lesser degree in the calculation of the level of the index or basket. In general, the variance of the level of an index or basket will be less than the average variance of its underlying components, and the more so the less correlated those components are.

Volatility-linked Transactions

Volatility is the square root of variance. Therefore, much of the discussion above regarding variance-linked Transactions is also applicable to volatility-linked Transactions.

Because volatility is the square root of variance, the payoff on a volatility-linked Transaction is a “concave” function of variance. This means that a volatility buyer will experience diminishing gains the more variance increases, and accelerating losses the more variance decreases.

There may be significant differences in the liquidity of the markets for variance-linked Transactions and volatility-linked Transactions. See III.B. – “Transactions involve liquidity risk” below.

Volatility-linked Transactions are more difficult to hedge and value than variance-linked Transactions. The value of a volatility-linked Transaction at any time is influenced by the factors described above for variance-linked Transactions and, in addition, by the volatility of the volatility of the Underlier. The volatility of volatility is difficult to estimate, which may lead different persons to calculate very different values for a volatility-linked Transaction. When we calculate the value of a volatility-linked Transaction for any purpose, including in the event of early termination of a volatility-linked Transaction, our interests will be adverse to yours. See IV.A.6 – “Conflicts of Interest and Material Incentives – Our financial market activities may adversely impact Transactions – Act as calculation agent, valuation agent, collateral agent, or determining party” below.

If your objective in entering into a volatility-linked Transaction is to hedge other exposure that you have to volatility risk, you should carefully compare the components of the formula for calculating volatility under the volatility-linked Transaction to the relevant characteristics of your other exposure. You should also be aware that otherwise similar volatility-linked Transactions may use formulas for calculating volatility that differ in material respects. To the extent there are differences between volatility as calculated under a volatility-linked Transaction and the volatility risk that you seek to hedge, the effectiveness of the volatility-linked Transaction for your hedging purpose may be limited. Furthermore, there can be no assurance that prior observed relationships, if any, between volatility and your other exposure will continue. See II.H – “No assurance of Transactions achieving your desired hedging objectives” above.

K. General characteristics of correlation-linked Transactions

Correlation is a statistical measure of the extent to which the changes in the prices of two or more Underliers, such as rates, assets or indices, over a specified period of time are similar to each other in terms of timing, direction and magnitude. The correlation among two or more Underliers is represented by a number called the “correlation coefficient,” which is often denoted by the Greek letter ρ . The correlation coefficient will always be between -1 and 1 , where a value near 1 indicates that the Underliers are *strongly positively* correlated; a value near -1 indicates that the Underliers are *strongly inversely* correlated; and a value near 0 indicates that the Underliers are *weakly* correlated (either positively or inversely) or uncorrelated. If the prices of two Underliers tend to increase at the same time and decrease at the same time and by similar percentages, those two Underliers are strongly positively correlated with each other. If this tendency is low, the two Underliers are weakly correlated, and if the two Underliers exhibit the opposite of this tendency, they are inversely correlated. Correlation is an indication of the extent to which the prices of two or more Underliers are influenced by the same factors.

The correlation between the data points in two data series is the covariance of those data points, scaled so that it is a number between -1 and 1 . The concept of covariance builds on the concept of variance, which is described in Section II.J – “General characteristics of variance- and volatility-linked Transactions” above. Whereas variance is a measure of the variability of the data points in a single data series around their mean, covariance is a measure of how similar the variability of the data points in one data series is to the variability of the data points in another data series, in terms of the timing and direction of deviations from their respective means.

The first step in the calculation of correlation is the calculation of covariance. The calculation of covariance is similar to the calculation of variance, except that it accounts for deviations in two data series instead of just one. As an example, the covariance of the daily returns of asset A and asset B over a specified period would generally be calculated by:

- (i) calculating the mean of the daily returns of asset A and asset B;
- (ii) for each relevant day in the period, determining by how much the daily returns of asset A and asset B on that day deviate from their respective means;
- (iii) for each relevant day in the period, multiplying the deviation of the daily return of asset A from its mean (the “asset A deviation”) by the deviation of the daily return of asset B from its mean (the “asset B deviation”);
- (iv) calculating the sum of the resulting product for all relevant days in the period; and
- (v) dividing that sum by the number of relevant days in the period.

The result (i.e., the covariance) is the average of the product on each relevant day of the asset A deviation multiplied by the asset B deviation. On any given day, this product will be positive if both deviations are positive or both are negative, and will be a greater number the greater the deviation for either. Conversely, on any given day, this product will be negative if one has a positive deviation but the other has a negative deviation, and it will be more negative the greater the absolute value of either deviation.

Once covariance has been calculated, correlation may be calculated by dividing covariance by the product of the volatility of asset A and the volatility of asset B over the relevant period. This step has the effect of normalizing covariance—that is, scaling it so that it is a number between -1 and 1 . It also causes correlation to reflect not only a relationship between the relevant assets in terms of the direction and timing of fluctuations, but also a relationship in terms of the magnitude of fluctuations. In other words, unlike covariance, correlation will tend to be greater if fluctuations in the same direction are similar in magnitude, and will tend to be lower if they are different in magnitude, even though they are in the same direction.

Under the terms of a correlation-linked Transaction, correlation will typically be calculated in a manner that is generally consistent with the description above, but with such specific terms and modifications as are specified for purposes of that Transaction. Because different correlation-linked Transactions define correlation in different ways, it is important to review and understand the manner in which correlation is calculated under a particular correlation-linked Transaction before entering into it. A formula for the calculation of correlation in a correlation-linked Transaction, including the calculation of covariance and the calculation of the relevant volatilities, will typically have the same components as those described for the calculation of variance in a variance swap under Section II.J – “General characteristics of variance- and volatility-linked Transactions” above, except for annualization. Please refer to that section for a discussion of important considerations relating to those components.

The correlation among the data points in more than two data series is typically calculated by calculating the average of the correlation among each pairing of data points. For example, the correlation among the components of an index of more than two components would typically be calculated as the average of the correlation among each pairing of the components of the index. The terms of the correlation-linked Transaction will specify the manner in which the average is calculated. If each correlation pairing is weighted equally in calculating this average but the components are unequally weighted in the index, the calculation of correlation in this manner may lead to a significantly different result than if the calculation of the average took into account the components’ actual weightings.

Correlation risk may arise from many types of transactions, including Transactions referencing equities, credit, commodities, rates and foreign currencies. If your objective in entering into a correlation-linked Transaction is to hedge other exposure that you have to correlation risk, you should carefully compare the manner in which correlation is calculated for purposes of the correlation-linked Transaction to the relevant characteristics of your other exposure. You should also be aware that otherwise similar

correlation-linked Transactions may use formulas for calculating correlation that differ in material respects. To the extent there are differences between correlation as calculated under a correlation-linked Transaction and the correlation risk that you seek to hedge, the effectiveness of the correlation-linked Transaction for your hedging purpose may be limited. For example, in some cases, your other exposure may be to covariance, rather than correlation, as would be the case if your other exposure were an option on an index or basket. In that case, you should understand that a hedge of correlation will not function as a full hedge of your covariance exposure, because covariance exposure consists of volatility exposure in addition to correlation exposure. Furthermore, there can be no assurance that prior observed relationships, if any, between correlation and your other exposure will continue. See II.H – “No assurance of Transactions achieving your desired hedging objectives” above.

III. MATERIAL RISKS

A. Transactions are subject to market risk

Market risk is the risk that the value of a Transaction, or the amount of payments or deliveries to be made under a Transaction, will be adversely affected by fluctuations in the level or volatility of, or correlation or relationship between, one or more market prices, rates or indices or other market factors, by new information or changes in perceptions regarding contingencies affecting an Underlier, or by illiquidity in the market for the Transaction or in a related market.

Depending on the terms of a specific Transaction, its value may be affected by multiple factors in addition to the prices, values, or levels of the Underliers. In general, the amount that other market participants may be willing to pay or receive to acquire and assume exposure to the cash flows and rights under a Transaction depends in part on market conditions and prices, values and levels for comparable Transactions prevailing at the time of valuation. For example, because future cash flows must be discounted at an appropriate rate to determine their present value, the value of Transactions will generally depend on interest rates and yield curves in the relevant currency, which in turn will reflect expectations of future inflation and other market factors. The choice of an appropriate discount rate may be affected by the collateral or other credit support arrangements in place for a group of Transactions. Interest rates and yield curves may also influence the value of a Transaction through their effect on the cost of funding positions in an Underlier or related instrument in order to hedge a future payment or delivery obligation under the Transaction. Transactions with option-like payouts will generally be affected by the volatility of the price or level of the Underlier, which volatility is also subject to changing market conditions. The value of Transactions under which the payout depends on the cumulative effect of events related to multiple Underliers (such as tranching or Nth-to-default credit default swaps, as described in the Disclosure Annex for Credit Derivative Transactions, or Transactions under which the stated return is determined as the best or worst from among a set of Underliers) will generally depend on the correlations between the Underliers. The value of a portfolio of Transactions will depend on the interaction of multiple factors, including cash or collateral flows under related credit support arrangements.

In addition to prices, values, or levels of the Underliers, factors that may affect the value of a Transaction (and, in some cases, the value of the Underlier itself) include:

- actual and/or expected volatilities (i.e., the frequency and magnitude of changes) in the prices, values, or levels of the Underliers;
- correlation (i.e., the tendency to move together in the same or opposite directions) of the prices, values, or levels of the Underliers;
- market interest rates, currency exchange rates, forward rates and yield and forward price curves;
- dividend rates, expected dividend rates and corporate events relating to Underliers, if applicable;
- liquidity in the markets for Transactions and Underliers or in related markets;
- the remaining term of the Transaction;
- optionality that a party has under the terms of a Transaction and its governing documentation, including optional early termination rights or rights to choose which particular securities, commodities, currencies, or other assets it may deliver in satisfaction of an obligation;
- the terms of collateral or other credit support arrangements, including whether a party is permitted to re-use collateral and the optionality that a party has to choose the composition of the credit support it is required to deliver;
- in the case of cleared Transactions, the clearinghouse's margining methodology, including in particular its method, if any, of adjusting for imputed interest on cumulative variation margin;
- actions of government, regulatory and tax authorities; and
- our creditworthiness or your creditworthiness, whether actual or perceived, including actual or anticipated upgrades or downgrades in a party's credit ratings or changes in other credit measures.

The market risk of a Transaction may be accentuated by complex payout calculations or other features. Transactions with such features may be subject to significant changes in value as a result of relatively small changes in the price, value, or level of an Underlier or other market factors. Such features include leverage, multipliers, option-like payouts, non-linear dependence on an underlying price, value, or level, or dependence on the path of an underlying price, value, or level. Transactions with such features may include caps, collars, floors, exotic options, Transactions with knock-in or knock-out rights, or range accrual swaps and options.

Furthermore, inflation may also reduce the value of any payments that you receive under a Transaction compared to your expectations when entering into the Transaction.

B. Transactions involve liquidity risk

Liquidity risk is the risk that a party may be unable to, or cannot easily, unwind or transfer a particular position in a timely manner at or near the previous market price or at all. Liquidity risk may vary greatly depending upon the terms of the Transaction, including, for example, notional amounts, rates, collateralization, highly customized features and other market sensitive terms.

In evaluating this risk in the context of Transactions, you should consider that a Transaction may be terminated or modified only pursuant to the terms of the Transaction or by mutual agreement of the parties. Similarly, any novation or other transfer of a Transaction may be made only pursuant to the terms of the Transaction or with the consent of the remaining party and, in either case, on terms agreed between the transferor and transferee. If our consent is required, we may not consent for a variety of reasons, which we may not be required to disclose to you.

Even though market-makers and dealers are likely to quote prices or terms for entering into or terminating particular Transactions and provide indicative prices or mid-market valuations for outstanding Transactions, there can be no assurance that another dealer will be available and willing to accept as transferee your rights and obligations under any Transaction between us, or that we would consent to such transfer. Even though market liquidity may exist generally for a particular type of uncleared Transaction at the time you enter into the Transaction, such liquidity may be diminished or unavailable in the future as more Transactions become cleared. Market liquidity for a type of Transaction may also be adversely affected by the development of updated or new industry standard terms, their adoption by market participants (including through amendments to outstanding Transactions via industry protocols) and the migration of trading interest to such new or updated standard terms.

There also can be no assurance that another dealer or market participant will be available and willing to offer you transactions that offset your Transactions with us. Even if an offsetting transaction is available, in the case of an uncleared Transaction, engaging in such an offsetting transaction (whether bilaterally or through a swap execution facility) will not automatically close out your Transaction with us (as might occur in the case of cleared transactions carried at the same clearing broker) and may not function as an effective hedge for that Transaction. Accordingly, it may not be possible for you to modify, terminate or offset your obligations or your exposure to the risks associated with a particular Transaction prior to its scheduled termination date.

In contrast, liquidity risk may be mitigated to a degree when a swap, security-based swap, foreign exchange swap, foreign exchange forward or mixed swap is cleared on a derivatives clearing organization or other clearinghouse, insofar as your ability to close out your transaction by entering into an offsetting transaction with other market participants would not require our consent or an existing trading relationship between us

and that other market participant. However, there can be no assurance that the level of liquidity for a cleared Transaction you enter into will continue to exist. Your ability to clear Transactions on a derivatives clearing organization or other clearinghouse in the future will depend upon a variety of factors, including the willingness of futures commission merchants to offer you clearing services, which could depend, among other things, on the level of your creditworthiness and your ability to meet margin calls.

C. Certain Transactions may be subject to restrictions on transfer under securities laws

Certain Transactions (including securities-based swaps generally) may be securities, or may constitute offers or sales of securities, under the U.S. Securities Act of 1933, as amended (the “Securities Act”) or other applicable securities laws. Such Transactions will not be registered under the Securities Act, or under applicable state securities laws and, therefore, the transfer of Transactions may be prohibited or restricted by such laws. Such Transactions will be entered into, modified or terminated pursuant to exemptions from registration under the Securities Act by virtue of Section 4(2) of that Act and/or Regulation D or another available exemption. You may be required to represent in the terms of the Transactions or other governing documentation that you are not entering into such Transactions with a view to resale or distribution in violation of applicable securities laws.

D. Engaging in Transactions may subject you to funding risk

Funding risk is the risk that, as a result of the unpredictability of payment or delivery obligations or margin (collateral) requirements under Transactions, or mismatches or delays in the timing of cash flows due from or to a party pursuant to Transactions or related hedging, trading, collateral or other transactions or activities, a party may not have adequate cash available to fund current obligations.

For example, if you are required to post margin (collateral) and the market moves against your position or the required level of margin is increased by us or, in the case of a cleared Transaction, by a clearinghouse or your clearing broker, you could be called upon to deposit additional margin (collateral) within applicable notice periods (which may be short) in order to maintain your position, subject in each case to the terms of the Transaction and other governing documentation. If you do not make a required payment or delivery under a Transaction or provide the additional required funds to meet a margin call within the prescribed time (taking into account any applicable notice requirements and grace periods), the documentation governing your Transaction may provide that the Transaction and possibly your entire relationship with us may be terminated, potentially requiring a termination payment by you.

Depending upon your other arrangements with us or with your other creditors, this could also trigger cross-default provisions in these other arrangements, which may provide us or your other creditors with rights to accelerate or terminate these other arrangements, possibly increasing your funding risk to the extent you are required to make additional payments or deliveries.

E. Credit risk of named counterparty (and any applicable guarantors or credit support providers), prime broker, clearing broker or clearinghouse

Credit risk is the risk that a party to a Transaction or, if applicable, a party's guarantor or credit support provider, will fail to perform its obligations when due, including its obligations to return collateral which it is no longer entitled to hold, or that the amount of collateral provided by that party or its credit support provider proves insufficient. Because of this credit risk, our and your creditworthiness and that of our and your guarantor or other credit support provider, if any, is a material consideration in entering into or determining the terms of a Transaction, and has an impact on the pricing, costs or credit enhancement of the Transaction. A party's exposure to credit risk, if so agreed, may be reduced by the delivery to it or to its custodian of collateral to secure the obligations of the other party or its guarantor or credit support provider, and the other party's exposure to credit risk for the return of such collateral may be reduced by delivering such collateral to such custodian to be held under mutually acceptable custodial arrangements, subject to the credit risk of the custodian as discussed below. Unless otherwise expressly agreed in writing or required by applicable law, neither your counterparty nor any guarantor or credit support provider for your counterparty will have any obligation to deliver collateral in connection with the Transactions.

We refer to the entity that is specified as your counterparty in the documentation evidencing a Transaction, and in whose name that documentation is executed, as your "named counterparty." Unless we have expressly agreed in writing to another arrangement, no affiliate of your named counterparty or any other entity will issue, endorse or guarantee, make payments or deliveries, or otherwise perform or assume any liability for obligations in respect of a Transaction. For the avoidance of doubt, this applies equally to Transactions where we act or an affiliate of ours acts as agent for a different legal entity that is the named counterparty. Accordingly, the Transactions are subject to your named counterparty's credit risk. In the event, however, that the named counterparty's payment or delivery obligations under or in connection with the Transactions are guaranteed by any guarantor or credit support provider, the satisfaction of such payment or delivery obligations is also subject to the credit risk of such guarantor or credit support provider. The value of the Transactions may be affected by the credit ratings of the named counterparty (or any applicable guarantor or credit support provider), and the credit spreads charged by the market for taking such credit risk.

The obligations of your named counterparty and, if applicable, any guarantor or other credit support provider, in respect of the Transactions are not insured or guaranteed by the Federal Deposit Insurance Corporation, the Securities Investor Protection Corporation or any other agency of the United States, or any other domestic or foreign government.

For some Transactions, our role may be solely that of an executing dealer (i.e., we and you may agree upon the terms of Transactions for give-up to a different entity that acts as your prime broker or for submission for clearing through a different entity that acts as your clearing broker). We refer to such Transactions, if accepted by your prime broker or the designated clearinghouse, respectively, as "**prime brokerage Transactions**" and "**cleared Transactions**". For prime brokerage Transactions, your named counterparty

generally will be the prime broker and, unless otherwise agreed, we shall have no liability for your prime broker's performance of its obligations to you. The consequences of a Transaction not being accepted by a prime broker, clearing broker or clearinghouse will be governed by applicable law and the terms of any agreement between you and us. You should be aware that an agreement on the terms of a Transaction for give-up or clearing that is not accepted by the prime broker, clearing broker or clearinghouse might result in there not being an outstanding Transaction between you and us, although governing documentation or applicable law may provide for the payment of compensation amounts to us in such circumstances.

With respect to cleared Transactions, you will have exposure to the credit and operational risks of your clearing broker and the clearinghouse. Applicable law and clearinghouse rules may afford some protection from the credit and possibly operational risks of your clearing broker for funds that you have deposited or earned with respect to cleared Transactions. You should familiarize yourself with these protections, particularly in the event of the insolvency or bankruptcy of your clearing broker. The extent to which you may be able to recover your money or property in the event of the insolvency of your clearing broker will depend on, among other factors, the following features of applicable laws, regulations, rules and security arrangements:

- requirements, if any, to segregate your funds from those of the clearing broker and its other customers;
- restrictions, if any, on the use of such funds by the clearinghouse and other depositories, including whether the funds may be used to satisfy obligations owed by the clearing broker or its other customers (so-called "fellow customer" risks);
- whether applicable arrangements confer a beneficial, security or other interest in property held by or due from the clearinghouse, or property under the control of the clearing broker;
- your priority in such property relative to other customers, the clearinghouse and general creditors of the clearing broker. (In this regard, you should note that in some jurisdictions (including under the "commodity broker" and "stockbroker" provisions of the US Bankruptcy Code), property which you have contributed or earned may be pro-rated among customers for purposes of distribution in the event of a shortfall); and
- arrangements, if any, for and legal restrictions on the portability of Transactions and associated collateral.

You should be aware that for cleared Transactions you may not have the ability to instruct the clearinghouse regarding the disposition of your Transactions or funds, and that upon a clearing member's default, the clearinghouse will deal with your funds and Transactions in accordance with its default management procedures, which may include the ability to terminate all cleared Transactions.

Once a Transaction is accepted for clearing and becomes a cleared Transaction, none of your executing dealer, your named counterparty (if there was a prior outstanding Transaction that was novated to the clearinghouse), or any of their respective guarantors or other credit support providers, if any, will have any further contractual obligation to you with respect to such Transaction, unless otherwise agreed.

Upon entering into any Transaction with your named counterparty, your ability to subsequently clear such Transaction on a clearinghouse or to novate your position in an uncleared Transaction to another dealer or market participant, and the cost thereof to you or the value you may receive in connection with any such novation, may be influenced by the creditworthiness of your named counterparty and, if applicable, any guarantor or other credit support provider for your named counterparty. Your ability to clear or novate a Transaction may be materially adversely impaired if one or more clearinghouses, futures commission merchants or other clearing brokers, dealers or other market participants, as the case may be, refuse to extend credit to your named counterparty (whether on a secured or margined basis or otherwise), or if credit limits, position limits, or other limits for your named counterparty (including any guarantor or other credit support provider, if applicable) would be exceeded.

F. Collateral delivered to a third party custodian is subject to that custodian's credit and operational risk

If you or any guarantor or credit support provider delivers collateral in connection with the Transactions that is held in an account at a third-party custodian, the return of such collateral is subject to the credit and operational risks of that third-party custodian, risks which the terms of the Transactions and other governing documentation may (or may not) have expressly allocated between the parties. If such third-party custodian were to default in its obligations to return that collateral when due, you (or, if applicable, your guarantor or credit support provider) could suffer substantial economic losses.

Similar risks, and considerations regarding their allocation, apply if your counterparty or any guarantor or credit support provider for your counterparty agrees to deliver collateral to you in connection with the Transactions that is to be held at a third-party custodian. Your ability to realize upon that collateral is subject to the credit and operational risks of that third-party custodian, and you could suffer substantial economic losses if that custodian breaches its custodial obligations. You also will be exposed to the credit risk of any issuer or obligor of any instrument comprising such collateral.

Regardless of which party may be delivering collateral, if the third party custodian commences an interpleader action, takes other action to resolve uncertainty regarding its duties with respect to the disposition of the collateral, or otherwise fails to act in a timely manner, there could be significant delays in obtaining the return of your collateral or your ability to realize upon our collateral.

G. Operational risks related to Transactions may result in losses

Operational risk is the risk of loss to a party arising from inadequacies in, or failures of, processes, procedures, systems and/or controls for conducting Transactions, including (i) recording, monitoring and quantifying the risks and contractual obligations associated with Transactions, (ii) recording and valuing Transactions and related transactions, (iii) making payments or deliveries, (iv) exercising rights before they expire, including option exercise rights, in a manner that complies with the terms of the relevant Transactions, (v) meeting regulatory filing, reporting and other requirements, or (vi) detecting human error or systems failures, including disaster recovery procedures.

Examples of operational risks include failures to record Transactions or life cycle events (including amendments, transfers, early terminations, or automatic exercises), to obtain quotations or market data needed to make payment, delivery or settlement computations, to give or respond to notices in a timely manner or to review and disaffirm erroneous confirmations before they become binding, and the loss of systems connectivity to, or the failure of, a trading facility or confirmation/affirmation platform.

Losses from operational risks can be substantial, including the loss of the entire value of a Transaction, which may be the case, for example, if an unexercised option expires in-the-money to you. The extent of your exposure to losses from the operational risks of parties not under your control may be determined, in part, by applicable law and/or contractual provisions that allocate or limit liability.

H. Transactions may involve legal and documentation risks

Legal and documentation risks include the risks that Transactions or related arrangements may not be legally enforceable, or that their documentation does not correctly reflect a party's understanding. As a result, disputes could arise as to the enforceability of Transactions or related documentation or the intended meaning of documentation terms, or ambiguous terms could be construed by a court or arbitrator in a manner that is materially adverse to a party's expectations. Changing documentation practices, including as a result of the development of new or updated industry standard terms, and their possible non-uniform adoption by market participants, may give rise to documentation basis risk (i.e., the risk that Transactions that are intended to be economically similar may behave differently in certain circumstances due to their incorporation of different documentation terms). Accordingly, parties should monitor evolving documentation practices and be alert to the possibility that new documentation terms may be incorporated through bilateral documentation, industry protocols, or changes in the rules of a confirmation service or trading facility. An industry protocol is typically a multilateral contractual amendment mechanism that allows for various standardized amendments to be made to the relevant existing agreements between any two parties who choose to adhere to the protocol. Industry protocols require adherence on the part of *both* parties to existing agreements in order for the protocol to apply to the parties' documentation.

The terms of a Transaction may contain new or unique features that may not be fully understood or standard in the market at the time you enter into the Transaction or may no longer be part of the standard terms of a Transaction as the standards evolve. Such features and evolving standards may expose you to various risks, including litigation risk, basis risk (i.e., the risk that otherwise similar Transactions entered into at different times may have different terms) and liquidity risk with respect to your Transaction.

Legal risks also include the risks that Transactions, or activities associated with Transactions, conflict with or violate applicable law (including bankruptcy laws) or the provisions of other contracts or instruments, potentially subjecting a party to lawsuits, regulatory proceedings, legal or equitable remedies and/or sanctions.

In the event that your named counterparty to the Transactions or, if applicable, its guarantor or other credit support provider, becomes subject to an insolvency proceeding, the laws governing the insolvency proceeding will have an important bearing on your rights, obligations, remedies and claims under the Transactions. Although applicable insolvency laws may contain protections for certain contractual rights with respect to qualifying financial contracts, the consequences of our insolvency for you will depend on various factors, including our and your regulatory status, specific applicable law including any non-US insolvency laws applicable to us, the characteristics of the Transactions, the terms of any master agreements and credit support arrangements governing the Transactions, the manner in which a court or bankruptcy official exercises its statutory or equitable powers (including, where applicable, to assign or repudiate contracts), and the existence in some jurisdictions or regulatory regimes of mandatory waiting periods to allow contracts to be transferred or assumed before termination rights may be exercised.

If a third party custodian holding your collateral becomes subject to an insolvency proceeding, your ability to recover your collateral will depend on similar factors, including the applicable insolvency regimes, whether the custodian has maintained sufficient unencumbered assets to satisfy claims of other custodial customers for which it holds securities of the same type as the securities included in your collateral, the legal characterization of your relationship with the custodian and the relative priorities and claim amounts of other claimants. Your claim for the return of cash collateral from the third-party custodian may be that of an unsecured creditor.

The protections, if any, afforded to uncleared Transactions and to collateral that you have delivered to us to secure your obligations in connection with uncleared Transactions differ from those applicable to transactions cleared on a derivatives clearing organization or other clearinghouse. In particular, you should be aware that if the governing documentation for uncleared Transactions effects an outright transfer of title in the collateral to us or permits us to re-use or rehypothecate the collateral, you may lose your proprietary interest in the collateral and have only an unsecured claim for the return of the collateral value remaining after its application to satisfy your obligations to us. Unless otherwise provided by law, you should assume that delivered cash and other collateral is not insured by any government or governmental agency (including the Federal Deposit Insurance Corporation).

The mechanics of an index Underlier may be governed by index rules. While any index rules are intended to be comprehensive, ambiguities may arise. In such circumstances, when we are the index sponsor (as defined in “ – O. Index Underliers” below) we will resolve such ambiguities in good faith and in a reasonable manner and, if necessary, amend any rules of the index to reflect such resolution.

While the index sponsor, at the time of entering into the Transaction, employs the index rules ascribed to the index, no assurance can be given that market, regulatory, judicial, financial, fiscal or other circumstances (including, but not limited to, any changes to or any suspension or termination of, or any other events affecting any constituent within, the index) will not arise that would, in the view of the index sponsor, necessitate an adjustment, modification or change of such methodology. The index sponsor may also, at any time and without notice, adjust, suspend or terminate the index. The index sponsor is also under no obligation to continue the calculation, publication and dissemination of the index. Any such adjustment, suspension, termination or non-publication may have a negative impact on the Transaction.

You should evaluate these considerations carefully, as well as all other legal, regulatory and documentation issues associated with conducting Transactions, in consultation with your legal advisors.

I. It may be difficult or impossible to establish the value of some Transactions

The price and characteristics of a Transaction are individually negotiated between the parties. Because Transactions may not be standardized or publicly traded, their value at any time may not be precisely ascertainable or even well defined. Our pricing models may differ from those of other dealers and may arrive at different values. Our pricing models contain proprietary features which we are not required to share with you. The assumptions and theoretical analyses underlying a pricing model may prove to be incorrect, and the observable market inputs used in the model, which we may obtain from third party sources, may not be representative of current market conditions. We make no representations or warranties regarding the accuracy of information from third party sources. Reported prices for similar transactions, even if they are available, may not be directly comparable due to differences in transaction size, credit or collateral terms or other particular features that may not be ascertainable from the information reported. Consequently, it may be difficult for you to establish an independent value for an outstanding Transaction.

You should not regard the daily or pre-trade mid-market mark or any other indicative quotation that we provide to be an offer to enter into or terminate the relevant Transaction at that value or price, unless we identify that value or price as firm or binding with respect to a specific quantity or notional amount of the Transaction. Indicative valuations that we provide to you may differ from those used to determine your collateral or margin delivery obligations or from the prices at which we record Transactions on our books and records. We make no representations or warranties that any such prices, values or valuations are suitable for complying with any financial or tax reporting obligation, determining net asset value, computing any tax liability or any other purpose, matters

which you should discuss with your own financial, legal, tax, accounting and other professional advisors and, except as otherwise agreed, we disclaim any liability for any such use or reliance thereon, whether losses or damages are direct, indirect, incidental or consequential, even if we are advised of their possibility.

The mid-market mark or daily mark that we may provide pursuant to CFTC Rule 23.431(d) does not include amounts for profit, credit reserve, hedging, funding, liquidity, or any other costs and adjustments.

We make no representations or warranties to you that the prices at which we offer or value Transactions are the best prices available in the marketplace. You may wish to seek representative quotations from other participants in the relevant market to compare prices or to determine the intrinsic or current market value of a particular Transaction.

J. Option Transactions present special considerations

Under a conventional cash-settled option, the purchaser of the option pays a premium in exchange for the right to receive upon exercise of the option (i) in the case of a call option, the excess, if any, of the reference price or value of the Underlier (as determined pursuant to the terms of the option) above the option's strike price or (ii) in the case of a put option, the excess, if any, of the option's strike price above the reference price or value of the Underlier (as so determined). Under a conventional physically-settled option structure, the purchaser of a call option has the right to purchase a specified quantity of the Underlier at the strike price, and the purchaser of a put option has the right to sell a specified quantity of the Underlier at the strike price.

When you purchase an option, you may suffer a total loss of premium (plus transaction costs) if that option expires without being exercised. An option's time value (i.e., the component of the option's value that exceeds the in-the-money amount) tends to diminish over time. Even though an option may be in-the-money to the purchaser at various times prior to its expiration date, the purchaser's ability to realize the value of an option depends on when and how the option may be exercised. For example, the terms of the Transaction may provide for the option to be exercised automatically if it is in-the-money on the expiration date. Conversely, the terms may require timely delivery of a notice of exercise, and exercise may be subject to other conditions (such as the occurrence or non-occurrence of certain events, such as knock-in, knock-out or other barrier events) and timing requirements, including the "style" of the option. Before entering into an option, you should make sure that you fully understand the method, conditions and timing requirements for exercising the option, including requirements to deliver a notice of exercise, whether and how automatic exercise applies, the definitions of and method for determining any barrier events, whether the terms permit partial exercise and/or exercise on more than one date, and any requirements as to a minimum exercise amount or an exercise amount that is an integral multiple of a specified amount.

The "style" of an option refers generally to when the option is exercisable or to the times at which the price or value of the Underlier will affect the option's payout.

An *American-style* option may be exercised at any time (i.e., on any business day as defined in the relevant documentation) during the specified exercise period prior to the time of expiration.

A *European-style* option may be exercised only on the specified exercise date (or expiration date) prior to the expiration time.

A *Bermudan-style* option may be exercised on the specified exercise date (or expiration date) prior to the expiration time and on a discrete number of specified prior dates.

An *Asian-style* option is a variant of the European-style option. In an Asian-style option, also known as an “average price” option, the reference price or value in relation to the Underlier is derived from an agreed upon calculation, which, by way of example, may be based upon an average of the Underlier’s reference prices or values at predetermined dates occurring during a specified “averaging period,” with the exercise date occurring at the end of such averaging period. An Asian-style option’s payout is therefore based upon the difference between the average reference price or value of the Underlier and the option strike price.

Uncovered option writing (i.e., selling an option when the seller does not own a like quantity of an offsetting position in the Underlier) exposes the seller to potentially significant loss. The potential loss of uncovered call writing is unlimited. The seller of an uncovered call is in an extremely risky position, and may incur large losses if the reference price or value of the Underlier increases above the exercise price by more than the amount of any premiums earned. As with writing uncovered calls, the risk of writing uncovered put options is substantial. The seller of an uncovered put option bears a risk of loss if the reference price or value of the Underlier declines below the exercise price by more than the amount of any premiums earned. Such loss could be substantial if there is a significant decline in the value of the Underlier. Uncovered option writing is thus suitable only for the knowledgeable investor who understands the risks, has the financial capacity and willingness to incur potentially substantial losses, and has sufficient liquid assets to meet applicable collateral or margin requirements. For combination writing, where the investor writes both a put and a call on the same Underlier, the potential loss is unlimited.

You should also be aware that the risk-return profile of an option may vary depending on the characteristics of the relevant Transaction. For example, a “knock-out option” may expire prior to the scheduled expiration date if the reference price or value of the Underlier falls below, in the case of a put option, or exceeds, in the case of a call option, an agreed upon price or value at specific points in time, or at any time during the exercise period, depending upon how the option is structured. The buyer of such an option bears the risk of reference price movements causing the option to expire prior to the scheduled expiration date. Transaction terms that give a party the right to extend or accelerate the scheduled termination date of a Transaction are economically equivalent to options. Such features may cause you to incur significant losses if exercised against you. The option premium in respect of such features may be in the form of an explicit payment or may be implicit in other terms of the Transaction.

Please refer to Section IV.A.2 below for certain considerations regarding hedging activity in connection with option Transactions.

Complex or Exotic Options

Complex or exotic options, including various barrier options, may involve multiple and varied conditions and triggering events, which may be interdependent and/or dependent on price trajectories or other factors, the occurrence or non-occurrence of which may have multiple and varied consequences. These events or conditions and consequences may interrelate to produce widely divergent outcomes. Complex or exotic options should be studied with great care to ensure that all potential ramifications, including any effects of leverage, path dependence, volatility and correlations among Underliers are well understood.

Swaptions

A swaption is an option that provides one party with the right, but not the obligation, to enter into a swap or security-based swap with agreed-upon parameters on the specified future exercise date or dates. As options, swaptions have the risks and characteristics described above. Selling a swaption may involve substantial risks analogous to uncovered option writing.

The considerations described above regarding the exercise of options apply to swaptions. Automatic exercise of a swaption, if applicable, may be contingent on the calculation agent determining that the swaption is in-the-money by an amount greater than a specified threshold. Because this determination of the in-the-money amount may differ from the holder's actual costs of procuring and entering into the underlying swap or security-based swap, automatic exercise provisions that incorporate a specified threshold may result in the holder receiving a lesser payout from the swaption than the holder might have derived through optional exercise. If the swaption is physically settled, automatic exercise may require that the holder enter into the underlying swap or security-based swap even if it would be disadvantageous for the holder to do so.

The terms of a swaption will specify whether cash settlement or physical settlement applies. Under cash settlement, if a swaption is exercised or deemed exercised, the seller of the swaption is obligated to pay the buyer the cash settlement amount, if any. Depending on the terms of the swaption, the cash settlement amount may be determined by the calculation agent based on market quotations for the underlying swap or security-based swap or some other agreed upon methodology. In the case of physical settlement, you should consider whether applicable laws and regulations require mandatory clearing of the resulting swap or security-based swap. In addition, you may have the right to elect clearing of the underlying swap or security-based swap and choose the clearinghouse. You should be aware that a clearinghouse's margining methodology, including in particular its method, if any, of adjusting for imputed interest on cumulative variation margin, may result in differences in value between a cleared and an uncleared swap or security-based swap with otherwise identical economic terms.

Transactions with option-like features

Some Transactions that are not primarily options may have option-like features, such as caps, floors, collars, early termination rights or rights to change Underliers. Such Transactions will be subject to risks associated with options as a result of such option-like features, as discussed above, in addition to the other risks of the particular Transactions.

K. Legislative and regulatory risk and uncertainty for persons engaged in Transactions

As part of global governmental and private sector efforts to stabilize and reform financial markets, changes in the regulation of persons who engage in Transactions have been considered, proposed, adopted, and/or implemented. For example, the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “**Dodd-Frank Act**”) establishes a new regulatory framework for Transactions that, among other matters, provides for the registration and comprehensive regulation of swap dealers, major swap participants, security-based swap dealers and major security-based swap participants, imposes clearing and trade execution requirements, creates recordkeeping and real-time reporting regimes and enhances the rulemaking authority of the CFTC and the Securities and Exchange Commission (“**SEC**”) with respect to registered entities and intermediaries subject to each agency’s respective oversight. New requirements relating to capital, margin, registration, trading restrictions and myriad other aspects of engaging in Transactions have been enacted and are being implemented, while others are still being formulated. It is anticipated that promulgation of new rules will be followed by periods in which the meaning and application of rules will be evolving. Further and unforeseeable changes may result. The regulatory changes and resulting requirements of the Dodd-Frank Act, the European Market Infrastructure Regulation, the Basel III framework and similar international reform efforts may limit or restrict, or increase the costs of, engaging in Transactions and related activities for us, you (e.g., the costs to you of obtaining and maintaining a legal entity identifier and complying with recordkeeping obligations, if applicable) and/or other market participants with which you may wish to transact. Provisions of the Dodd-Frank Act may cause or require certain market participants to transfer some of their derivatives activities to separate entities, which may not be as creditworthy as the current entities. Accordingly, the ability to enter into and perform Transactions or engage in future Transactions may be affected in unpredictable ways, including increasing the costs of or reducing the incentives for engaging in such activities.

L. Legislative and regulatory risk and uncertainty regarding Transactions, Underliers and related markets

As part of global governmental and private sector efforts to stabilize and reform financial markets, changes in the regulation of Transactions, Underliers and related markets have been considered, proposed, adopted, and/or implemented. Such measures include temporary and permanent restrictions on short selling securities, price fluctuation limits, trading halts, limits on maximum net long or short futures and swap positions that any person may hold or control in particular commodities, commodity price caps, restrictions

on 'naked' credit default swaps, taxes on certain financial transactions, capital controls and measures to address the risks of high frequency trading. It is difficult to predict the impact of such regulations or the likelihood of proposed regulations being adopted, but these regulations could significantly increase compliance costs, cause significant and unexpected market disruptions, or adversely affect liquidity, valuations or volatility in the markets of Underliers. Any of these consequences could in turn adversely affect the Transaction Economics or, subject to the terms of the Transaction and other governing documentation, result in the termination of affected Transactions at unfavorable prices or values.

M. Emerging Market Jurisdictions

In some Transactions, the Underliers may be related to issuers or reference entities that are organized or located in, or are sovereign governments or governmental entities of, emerging market jurisdictions, or the Underliers may be prices, levels, or values determined by reference to trading markets in such jurisdictions or published by a central bank or other governmental entity of such a jurisdiction. Commercial arrangements with respect to emerging market jurisdictions may be subject to greater uncertainty and volatility when compared to well-developed markets and may be exposed to factors including:

- (i) the risk of significant and sudden changes in political, social, economic and fiscal policies, laws, regulations and interpretations, including with respect to currency exchange, taxation, foreign ownership of assets, prohibitions on the repatriation of assets, nationalization of businesses and other laws or restrictions, any of which may be applied with little advance notice or retrospectively;
- (ii) difficulties or uncertainty regarding the ability to enforce contractual rights and obligations in local courts;
- (iii) changes in other market or economic factors that may affect the ability to convert the currency of the relevant emerging market jurisdiction to another currency or remit the proceeds of such conversion;
- (iv) lesser liquidity in local securities and futures markets, which may trade a small number of instruments and may be unable to respond effectively to increases in trading volume, potentially making prompt liquidation of any relevant underlying assets difficult or impossible at times, or possible only at unfavorable prices;
- (v) risks related to custodial arrangements and delays or other factors in the settlement of securities; and
- (vi) less developed accounting, auditing, financial and other reporting standards, and lower levels of disclosure and regulation of securities, when compared to more developed markets.

Such factors may affect the price, level or value of an Underlier, the calculation agent's or other determining party's ability to make required determinations, your or our ability to perform obligations, and our ability to enter into or unwind hedge positions in respect of Transactions and the price and timing at which we or an affiliate may enter into or unwind such positions. The occurrence of such events may trigger contractual terms of Transactions or governing documentation that address these risks, and the operation of such terms may adversely affect the Transaction Economics. Alternatively, these risks might not have been expressly provided for in Transaction terms or governing documentation, or their consequences may be unclear, which in either case may lead to uncertainty or disputes.

N. Combination Transactions

In some cases you may enter into two or more Transactions that are intended to operate in an integrated manner to achieve your desired objectives. Such Transactions may be documented, either separately or together within a single confirmation, as a combination of component Transactions, such as a collar documented as a put and a call, a tranching option consisting of component options with sequential expiration dates or Transactions entered into sequentially that are intended to operate in an interdependent manner. The Underliers of the component Transactions may be in different asset classes. You should review the terms of such Transactions and consider the possibility that termination events, disruption fallbacks, adjustments, extraordinary events and other important terms may not apply identically to all of the component Transactions, which may adversely affect the Transaction Economics. For example, if one of the component Transactions is a cleared Transaction or a prime brokerage Transaction but the other component Transactions are not, the cleared Transaction or prime brokerage Transaction will be subject to the rules, by-laws and procedures of the applicable clearinghouse or the terms of the applicable prime brokerage agreement, which may lead to differences between the component Transactions that were not intended. Furthermore, when you seek to unwind the combined Transaction, you may have to unwind the component Transactions on different terms – for example, because you may not be able to unwind all component Transactions at the same time – which may also lead to a different combined payoff than expected.

You should refer to the disclosure annexes to this General Disclosure Statement for each applicable asset type and the relevant disclosure in those annexes relating to the applicable Transaction type for important disclosures about the component Transactions. You should also consider carefully the relationships between the component Transactions and between the applicable asset classes, which may cause the characteristics and risks of the combination of Transactions to differ from what may be expected based on the individual characteristics and risks of each component Transaction.

O. Index Underliers

Certain Transactions may have indexes as Underliers. An index is generally a number or level, which varies over time, that is derived from prices or other quantifiable information about its constituents, or the index may simply be a set of constituents that together serve

as Underliers for a Transaction or combination of Transactions. An index may be based on observed transaction prices, indicative or estimated prices or levels, survey results, economic statistics or other factors. Examples of indexes include equity indexes, indexes based on the settlement prices of exchange-traded contracts for physical commodities, a set of reference entities with respect to which the credit events are defined that determine consequences under a credit derivative transaction, or measures of inflation, weather conditions or real property prices. You should understand the methodology, characteristics and limitations of any index that serves as an Underlier for a Transaction and consider carefully whether it is appropriate in light of your objectives for entering into the Transaction.

An index may be compiled by an industry association or other private body, a single private firm or by a government agency (the “index sponsor”). The index sponsor is responsible for maintaining an index in accordance with any relevant index methodology. The index sponsor may in certain situations add, delete or substitute the constituents included in the applicable index or make methodological changes that could change the level of that index. Additionally, the index sponsor may change the publication timing or otherwise alter, discontinue or suspend calculation or dissemination of the applicable index. The index sponsor does not act as an advisor and has no obligation to consider your interests with respect to any such actions. Any of these actions could adversely affect the level of the index and could trigger disruption fallbacks (e.g., an alternative determination of the index level by the calculation agent) or postponement, adjustment or termination provisions of a Transaction with an index Underlier, any of which could adversely affect the Transaction Economics. The operation of such provisions may be subject to discretionary determinations by the calculation agent or other designated party, which may involve subjective judgment and uncertainty. We may be the index sponsor for the index underlying a Transaction. Please see below and refer to Section IV.A.9 below for certain considerations regarding our role as index sponsor.

In the ordinary course of business the index sponsor and its affiliates may trade components of the index for their own accounts and for other accounts under their management. Such trading activities could potentially affect the level of the index. The index sponsor or its affiliates may act as issuer, agent or underwriter for issuances of securities, or enter into other transactions with returns linked or related to changes in the level of the index or the components of the index and in connection therewith may enter into hedging transactions. Such transactions may affect the level of the index and therefore the value of a Transaction linked to such index, and may generate profit to the sponsor of the index or its affiliates, even if the level of the index declines.

P. Dependence of Transactions on our Hedging Positions

The terms of a Transaction may provide (1) that costs incurred in connection with acquiring, maintaining or disposing of any hedge positions that we or an affiliate have entered into related to the Transaction are passed through to you, including taxes, duties and fees, or (2) that the terms of the Transaction may be adjusted to account for the economic effect of events affecting such hedge positions or (3) that we may terminate the Transaction if such costs are incurred or such events occur. Further, our obligations

under a Transaction may be limited to amounts actually received in respect of such hedge positions and, if applicable, which are able to be remitted out of or transferred between relevant accounts in the jurisdictions relevant to such hedging activity. Events that affect the transferability or convertibility of a currency in which such hedge positions are denominated could result in the postponement of valuation dates and payment dates, changes in the settlement currency or the value of an Underlier being deemed to be zero. Please refer to the Disclosure Annex for Foreign Exchange Transactions, published by the International Swaps and Derivatives Association, Inc. for a discussion of certain events that may affect foreign exchange markets.

Q. Payments

Unless otherwise agreed in the governing documentation of the Transaction, payments may be subject to deductions for tax, duty, withholding or other payments required by law.

R. Eligible Contract Participant Status

If you are not an eligible contract participant (within the meaning of the Commodity Exchange Act), it is unlawful for you to enter into a swap unless the swap is entered into on, or subject to the rules of, a designated contract market. If you are an eligible contract participant and enter into a swap that is not entered into on, or subject to the rules of, a designated contract market, you should be aware that certain changes with respect to the swap, such as a material amendment, a partial termination or, in the case of a swaption, your exercise of the option to enter into the underlying swap, may, for purposes of the Commodity Exchange Act and rules thereunder, result in the entry into a new swap. If so, you may only be able to amend, partially terminate or exercise your rights under the swap if you are then an eligible contract participant.

IV. CONFLICTS OF INTEREST AND MATERIAL INCENTIVES

A. Our financial market activities may adversely impact Transactions

We may act as, among other things, an investor, research provider, placement agent, underwriter, distributor, remarketing agent, structurer, securitizer, lender, investment manager, investment adviser, commodity trading advisor, municipal advisor, market maker, index sponsor, trader, prime broker or clearing broker. In those and other capacities, we may purchase, sell or hold a broad array of investments, we may trade securities, loans, commodities, currencies, credit instruments, indices, baskets, derivatives, and other financial instruments for our account or for the accounts of our customers and other counterparties, including Transactions, or provide advice or other services that may result in our customers engaging in such activities. We may have other direct or indirect interests in these products and the markets, data providers, index sponsors, clearinghouses, settlement systems and other market utilities with respect to such products. We may provide liquidity to a trading venue, clearing member or exchange member. We may be a participant on an exchange settlement committee. We may be a participant or sole index sponsor in determining the constituents of an index and

may submit or compile estimates or prices upon which an index is based, or provide or calculate transaction data.

We may own equity in, provide financing to, serve on the board of directors of, provide investment banking advice on mergers, restructurings and other corporate actions to, or initiate or participate in the enforcement of remedies against, issuers and other third parties whose activities may influence or otherwise affect the price, value, or level of Underliers and/or the Transaction Economics.

Our financial market activities may, individually or in the aggregate, materially affect the value of an Underlier, either positively, or negatively, and may adversely affect your Transaction Economics. You should expect that our interests, and the interests of our customers or other counterparties, may at times be adverse to your interests under or in connection with Transactions we conduct with you. **Unless otherwise required by applicable law or agreed in connection with a particular Transaction, we are not acting in your best interests and we are not assessing the suitability of the Transaction for you.** Without limiting the foregoing (except as the same may be limited by applicable law), we may engage in the following activities, which may, individually or in the aggregate, adversely affect your Transaction Economics, create a conflict between you and our interests and give us a material incentive to enter into Transactions with you:

- 1. Publish research reports or otherwise express views regarding Underliers**

We may publish research from time to time on Underliers or Transactions. More generally, we may express views on financial markets and other matters that may influence the price, value, or level of the Underliers and related Transactions in a way that adversely affects your Transaction Economics.

Our personnel, including sales and trading, investment research and investment management personnel, may make investment recommendations, provide market color or trading ideas, or publish or express independent views in respect of a wide range of issuers, securities, other instruments and market variables, including interest rates, inflation, foreign exchange, commodities and other variables that may be relevant to an Underlier. These strategies may include, for example, buying or selling a financial instrument or buying or selling credit protection against a default or other event involving an issuer or financial instrument. Any of these recommendations and views may be positive or negative with respect to an Underlier or other securities or instruments similar to or linked to an Underlier or may result in trading, investment, or hedging strategies that have a positive or negative impact on the market for such securities or instruments, particularly in illiquid markets. In addition, you should expect that our trading, research or investing personnel will have or develop independent views regarding an Underlier, Transaction or relevant industry or other market trends, which views may be inconsistent with your views or objectives in

connection with particular Transactions and may adversely affect your Transaction Economics.

Any research, opinions or recommendations expressed by us or our affiliates may not be consistent with each other and may be modified from time to time without notice. You should make your own independent investigation of the merits of entering into each Transaction and the Underliers.

2. Trade for our own account or the account of customers

We may on a regular basis trade (taking long or short positions, or both concurrently) in instruments identical or economically related to your Transactions or the Underliers. We may engage in these activities for our own proprietary accounts, for accounts under management or to facilitate transactions (including block transactions) on behalf of customers.

Subject to any express agreement in the documentation governing a Transaction, we may, in our discretion, decide to hedge our exposure under Transactions by taking positions in the Underliers or related instruments. We may adjust our hedge dynamically by purchasing or selling the Underliers or related instruments, and may close out or unwind our hedge positions. Our market activities in connection with such hedging may occur, or become more frequent or of greater magnitude, in connection with or in anticipation of the initiation or termination or exercise of your Transactions, on or before a valuation or observation date, or, in the case of option Transactions, when the price, level or value of the Underlier is near the exercise level or level at which a “barrier” or other condition may be satisfied. We may also structure, trade and market instruments that may take opposing economic positions to your Transaction.

The foregoing trading activities may adversely affect (i) the price, value, or level of Underliers and Transactions, (ii) the likelihood that an option Transaction will be in-the-money or become exercisable or that a barrier event will occur, or (iii) your trading, investment or hedging strategies or results. The results of your Transactions may differ significantly from the results achieved by us for our proprietary or managed accounts. We are under no duty to inform you about the nature or extent of our trading activities or to refrain from or restrict such activities as a result of being your counterparty to Transactions or having received any information regarding your trading interest with respect to Transactions, except in each case to the extent we have expressly agreed in writing or as may be required under applicable law.

3. Engage in similar Transactions with other counterparties

We may engage in Transactions with other counterparties that have trading, investment, or hedging objectives that are similar to yours. This may create potential conflicts where there is limited availability or limited liquidity for those Transactions. We may also engage in Transactions with other counterparties that

have trading, investment, or hedging objectives adverse to yours. We are under no duty to inform you of the nature or identity of these other counterparties or their respective Transactions.

Transactions by multiple counterparties may have the effect of diluting or otherwise negatively affecting the values, prices or levels of Underliers or Transactions, or your trading, investment or hedging strategies or results. The results of your Transactions may differ significantly from the results achieved by other counterparties.

4. Possess non-public information relevant to Transactions

Acting in the various capacities noted above or elsewhere may give us broad access to the current status of certain markets, investments and products. For example, we may have investment banking or other commercial relationships with and access to information from the issuer(s) of securities, financial instruments, or other interests underlying your Transactions. As a result, we may be in possession of information, which, if known to you, might cause you to seek to dispose of, retain or increase interests in one or more Transactions. Unless otherwise agreed, we will be under no duty to make any such information available to you, except to the extent that disclosure may be required under applicable law.

5. Lack information across business lines and affiliates

As a result of logistical, technical and physical separation between and among business lines, administrative functions and legal entities, including informational barriers constructed between different divisions, the natural persons acting on our behalf to engage in Transactions with you are unlikely to have access to all information known collectively by all of our business lines, and they may not be able to consult with personnel in other business lines. If so, they will not have the benefit of all the information held by and among all of our business lines and administrative functions.

6. Act as calculation agent, valuation agent, collateral agent, or determining party

We may act as the calculation agent, valuation agent, collateral agent, or other determining party with respect to Transactions for determining payments or deliveries during the term of Transactions, upon termination or otherwise, any disruption events, dilution adjustments or termination events, and any other terms of a Transaction as agreed with you. In such capacity, our role and our duties will be limited to those set out in the Transaction or the governing documentation, it being understood that our economic interests with respect to Transactions in which we act as a calculation agent or other determining party are potentially adverse to yours with regard to the Transactions. Determinations we make in one or more of these roles may adversely affect the Transaction Economics.

7. Have an economic interest in the execution venue or clearinghouse

We may have an ownership or other economic interest (such as the right to receive payment for order flow, reporting or other fees) in a swap execution facility, designated contract market, national securities exchange, or other trading venue on which Transactions may be executed. We may have ownership or other economic interests in a clearinghouse to which a Transaction executed between us could be submitted or given up for clearing. We may have access to one or more trading venues or clearinghouses and not others. Our directors or employees may serve as directors of one or more trading venues or clearinghouses. In such cases, we may derive financial or other benefits if your Transaction is executed and/or cleared at such venue or clearinghouse. Conversely, it may be financially advantageous for us if a Transaction is executed bilaterally and not cleared (applicable law permitting). For example, if a Transaction is not cleared, we may incur lower funding costs, derive a funding benefit or face more favorable market conditions in which to hedge our exposure resulting from a Transaction.

8. Act as an agency broker or clearing broker

If we act as your agent for the execution of Transactions, subject to applicable law, we may have discretion to decide where to direct your orders, to solicit persons to trade opposite those orders, or to enter into Transactions opposite those orders for our own account or the account of our affiliates or customers. We may derive financial and other benefits (such as the right to receive payment for order flow, reporting or other fees) from such decisions. We (including an affiliate of your named counterparty) may act as your futures commission merchant or other clearing broker with respect to cleared Transactions. A clearing broker may earn a return from the investment of customer funds deposited to margin cleared Transactions. Accordingly, we may have an incentive to encourage you to use our services (including those of an affiliate) as your futures commission merchant or other clearing broker.

9. Act as index sponsor

We may act as index sponsor for certain indices that may be Underliers to Transactions.

Potential conflicts of interest may exist in such cases as we take on separate roles (i.e. Transaction counterparty, calculation agent and index sponsor). In accordance with the index methodology, the index sponsor will determine the prices and other data relevant to the calculation of the level of the index, including whether a market disruption event or other event permitting suspension of the index has occurred. In limited circumstances, the index sponsor may add, delete or substitute the components of the index, make other methodological changes that could change the level of the index or alter, discontinue or suspend calculation or dissemination of the index, any of which may affect the Transactions.

As index sponsor we will determine, calculate and publish the index, while we also may issue, enter into, promote, offer or sell transactions or investments linked, in whole or in part, to the index. In addition, we may have, or may have had, interests or positions, or may buy, sell or otherwise trade positions in or relating to the underlying assets linked to the index. Such activities may or may not have an impact on the level of the index and therefore on the value of Transactions. In light of these different roles performed by us, you should be aware of our potential conflicts of interests.

B. Transaction fees and implicit spreads may increase your loss or decrease your return

We generally enter into Transactions to earn a profit or to manage the risks of exposures we have accumulated through the conduct of our business. Our profits may derive from explicit fees and commissions, or may be implicit in the difference between payments and deliveries made to or by us under Transactions and our costs (or gains) in hedging and carrying the resulting exposures. It is possible that we may earn a substantial return from our hedging positions related to a Transaction while the value of the Transaction to you declines or fails to increase by a commensurate amount. Before you enter into a Transaction, you should review and understand all commissions, fees and other charges for which you will be liable, including all amounts payable or due to us. These charges will affect your net profit (if any) or increase your loss. We may be paid a structuring fee distinct from payments made in connection with a Transaction.

C. We may use third parties for marketing or solicitation

We may pay third parties to market or solicit counterparties and/or Transactions on our behalf. Accordingly, any party that referred you to us may have an economic stake in your Transactions.

D. Our own transaction fees and costs may be reflected in the price or economic terms of Transactions

We have a variety of costs and expenses associated with entering into and carrying Transactions. These may include, without limitation, fees, commissions and other charges that we may become obligated to pay to third parties from time to time in connection with Transactions, including brokerage fees, referral fees, and execution, clearing and/or reporting fees associated with our compliance with applicable law. Unless otherwise agreed, you will not be obligated to reimburse us for these fees, commissions or other charges, but as with any of our other costs and expenses, you should assume they are reflected in the price or other economics of your Transactions. In this regard, we generally do not disclose our costs and expenses except as may be required by applicable law.

E. Our lobbying activities may adversely impact Transactions

We may directly, indirectly, individually or through participation in industry trade groups or other associations, engage in lobbying or other advocacy efforts, both domestically and internationally, before national and state legislatures, governmental agencies, regulatory bodies or other authorities or officials (including the CFTC, SEC, bank supervisors and securities and financial services regulators) on matters relating to Transactions (whether of a legal, regulatory, financial, tax, or accounting nature or otherwise) in which our interests and positions may conflict with or be adverse to your interests and positions on such matters.

V. NOTIFICATIONS

A. Scenario Analysis

Prior to entering into a Transaction in any swap that is not available for trading on a designated contract market or swap execution facility, you may request, and consult on the design of, a scenario analysis to allow you to assess your potential exposure in connection with such swap. Any such scenario analysis will, subject to terms as agreed between the parties:

- be prepared at your request for informational purposes only;
- be confidential and solely for your use, and may not be reproduced, published or distributed to anyone else without our prior written consent, subject to applicable law;
- be based upon model assumptions you provide to us and should not necessarily be considered reflective of our opinion of these assumptions;
- reflect our use of proprietary internal models and/or third party models to determine estimated prices, values, spread levels, or other variables based on your model assumptions, and we do not represent that these models are accurate or complete, or that they have been calibrated for scenarios comparable to your assumptions, and they should not be relied upon as such, nor will we be under any obligation to disclose to you confidential or proprietary information concerning such models; and
- not constitute a guarantee nor offer indemnification to you (or any other person) for losses, claims, damages, liabilities, costs or expenses, direct or indirect, arising from your use of or reliance on the information contained in the analysis.

A scenario analysis is not a prediction of actual Transaction results, and there can be no assurance that the range of assumptions employed will encompass all possible market conditions.

B. Clearing

With respect to any swap that is subject to the mandatory clearing requirements under Section 2(h) of the Commodity Exchange Act, subject to the terms of any agreement between us and to applicable laws, you have the sole right to select the derivative clearing organization or clearing agency at which the swap will be cleared. With respect to any swap that is not subject to these mandatory clearing requirements but is eligible for clearing, subject to the terms of any agreement between us and to applicable laws, you may in your sole discretion elect to clear such swap, and, if you so elect, select the derivative clearing organization or clearing agency at which the swap will be cleared.

C. Daily Mark

For uncleared swaps and uncleared security-based swaps, we will provide you with a “daily mark” as of the close of business or at such other time that we agree in writing.

Daily marks will not reflect the actual market price at which an offer would be made to purchase, sell, enter into, exercise, novate, unwind, terminate or settle a Transaction. Rather, they will represent mathematical approximations of market values as of a given date derived from proprietary models and methodologies based on certain assumptions regarding past, present and future market conditions or other factors, or from other sources of pricing information (e.g., third party quotes, prices on trading venues, or clearinghouse marks for comparable or interpolated Transactions). In our sole discretion, we may use a variety of models, methodologies and assumptions to prepare our daily marks, depending upon the type of Transaction, its characteristics, whether there is a liquid market, and other factors. We reserve the right to alter, replace or vary our models, methodologies, and assumptions from time to time. As provided in CFTC Rule 23.431, we will disclose the methodology and assumptions used to prepare our daily marks for Transactions we enter into with you and any material changes during the term of the Transaction, provided however, that we will not disclose any confidential, proprietary information about any model.

Please note that any daily mark we provide to you for a Transaction shall not include amounts for our profits, credit reserves, hedging, funding, liquidity, or any other costs or adjustments, and may not necessarily:

- be a price at which either we or you would agree to replace or terminate the Transaction;
- include adjustments you may need to make on your books and records or financial statements to account for your profits, credit reserves, hedging, funding, liquidity or other costs in connection with the Transaction;
- unless otherwise expressly agreed, be the basis for margin calls and maintenance of collateral; and
- be the value of the Transaction that is marked on our books and records.

For cleared swaps originally executed by you with us, you have the right to receive the daily mark from the relevant derivatives clearing organization upon request, and subject to the terms of any agreement between us and to applicable laws, you may decide whether you wish to receive the daily mark through access to the relevant derivatives clearing organization or your futures commission merchant or from us.

D. Right to Segregation of Certain Collateral

For uncleared Transactions, subject to the terms of any agreement between us and to applicable laws, you will have the right to require segregation of the funds or other property that you provide to us to margin, guarantee, or secure your obligations, other than with respect to variation margin and provided that the property is of a type that may be held by a third party custodian. Upon your request following effectiveness of the relevant rules and statutory provisions, we will segregate such funds or other property for your benefit and in accordance with the rules of the CFTC or SEC, including maintaining the funds or other property in a segregated account separate from our assets and other interests, which account shall be carried by an independent third party custodian and designated as a segregated account. The terms of our Transactions with you may provide for you to reimburse us for the costs of such custodial arrangements, or alternatively we may reflect such costs in the economic terms of Transactions we offer you.

E. Special Entities

If you are an employee benefit plan defined in Section 3 of the Employee Retirement Income Security Act of 1974 (29 U.S.C. 1002) (“ERISA”) that is not subject to Title I of ERISA or otherwise defined as a “Special Entity” pursuant to CFTC Rule 23.401(c)(1), (2), (4) or (5), you may elect to be treated as a Special Entity pursuant to CFTC Rule 23.401(c)(6).