

VIA CFTC PORTAL

8 November 2021

Mr. Christopher Kirkpatrick
Commodity Futures Trading Commission
1155 21st Street NW
Three Lafayette Centre
Washington, DC 20581

LCH Limited Self-Certification: Price Alignment Amount – FCM Procedures

Dear Mr. Kirkpatrick,

Pursuant to Commodity Futures Trading Commission (“CFTC”) Regulation §40.6(a), LCH Limited (“LCH”), a derivatives clearing organization registered with the CFTC, is submitting for self-certification revisions to align the provisions that address the change of interest rate for determining the Price Alignment Amount in the LCH FCM Procedures (“FCM Procedures”), with those under LCH Procedure 2C (“Procedure 2C”).

Part I: Explanation and Analysis

LCH plans to align the provisions related to Price Alignment Amount in the FCM Procedures to those in Procedure 2C. Procedure 2C describes the process for changing the rate and does not provide for the rates in the Rulebook, but rather refers to the LCH website.¹ In order to make this change, LCH plans to revise its FCM Procedures and make minor changes to the related section of Procedure 2C.

Part II: Description of Rule Changes

FCM Procedures:

The following is a summary of the planned changes:

- Revise the explanation of Price Alignment Amount in Section 2.1.7(e) to correspond with Section 1.7.5 of Procedure 2C
- Revise Section 3.5.2 (Price Alignment Amount Rate) to align with Section 1.12 of Procedure 2C. This revision eliminates the need to define each rate in the Rules and refers instead to LCH’s website. The Rules provide the procedures to be followed before changes to the published rates can be made
- Revise references to “PAA” as an abbreviation for Price Alignment Amount to instead refer to “Price Alignment Amount”

¹ <https://www.lch.com/>

Procedure 2C:

There are two minor revisions in Section 1.12:

- Change “Contracts” to the defined term “SwapClear Contracts”
- Refer to “this Section 1.12” rather than “the immediately foregoing paragraph” for completeness

The changes to the FCM Procedures and Procedure 2C are set out in **Appendixes I-II**. The changes will be effective not earlier than November 23, 2021.

Part III: Core Principle Compliance

LCH reviewed the proposed rule changes against the requirements of the Core Principles and finds it will continue to comply with all the requirements and standards set forth therein. Specifically, these rule changes have potential relevance to Core Principle C (Participant and Product Eligibility) and Core Principle L (Public information).

The changes described in this filing ensure that LCH meets the objectives of Core Principle C, including that LCH have appropriate requirements for determining the eligibility of agreements, contracts, or transactions submitted for clearing, taking into account LCH’s ability to manage the risks associated with such agreements, contracts, or transactions. Core Principle C also requires LCH to select product unit sizes and other terms and conditions that maximize liquidity, facilitate transparency in pricing, promote open access, and allow for effective risk management. LCH believes consistency in the calculation of the Price Alignment Amount will facilitate transparency and maintain compliance with Core Principle C.

Additionally, the changes described in this filing ensure that LCH meets the objectives of Core Principle L, including that, in addition to the specified requirements of §39.21, LCH make available any information that is relevant to participation in the clearing and settlement activities of LCH. LCH considered its public information requirements and believes providing the applicable interest rates for the Price Alignment Amount on its website, rather than requiring reference to various sources, will provide clarity to market participants and enhance its compliance with Core Principle L.

LCH considered its product eligibility requirements, specifically those related to the maintenance of product terms and conditions, and public information requirements and determined that the changes outlined in this filing will not impact LCH’s compliance with Core Principle C and Core Principle L. As a result, LCH believes these changes are consistent with the requirements of Core Principle C on Participant and Product Eligibility under CFTC Regulation §39.12 and Core Principle L on Public Information under CFTC Regulation §39.21.

Part IV: Public Information

LCH has posted a notice of pending certification with the CFTC and a copy of the submission on LCH’s website at: <https://www.lch.com/resources/rulebooks/proposed-rule-changes>.

Part V: Opposing Views

There were no opposing views expressed to LCH by governing board or committee members, members of LCH or market participants.

Certification

LCH hereby certifies to the CFTC, pursuant to the procedures set forth in CFTC Regulation §40.6, that the attached submission complies with the Commodity Exchange Act, as amended, and the regulations promulgated thereunder.

Should you have any questions please contact me at julian.oliver@lch.com.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Julian Oliver', is written over a light blue horizontal line.

Julian Oliver
Chief Compliance Officer
LCH Limited

Appendix I

LCH Limited Procedures Section 2C (SwapClear Clearing Service)
Changed Pages



LCH LIMITED

PROCEDURES SECTION 2C

SWAPCLEAR CLEARING SERVICE

In response to a request from a SwapClear Clearing Member, the Clearing House may require additional Collateral to cover such SwapClear Clearing Member's stress loss exposure with respect to a Client Account (the "**Stress Loss Margin**"). The Stress Loss Margin may be subject to an additional percentage add-on as the Clearing House may require in its sole discretion. The Stress Loss Margin and any add-ons, as applicable, will be called as part of the end of day margin run and by means of morning PPS calls. The request must indicate the percentage of the stress loss exposure that will be covered by Stress Loss Margin. Any request pursuant to this paragraph is subject to the Clearing House's consent in its sole discretion (and the Clearing House may apply a lower percentage than that requested by the SwapClear Clearing Member.)

A SwapClear Clearing Member may cease paying Stress Loss Margin by giving not less than three (3) business days' written notice to the Clearing House.

Before making any request to pay or notifying the Clearing House of ceasing to pay Stress Loss Margin, a SwapClear Clearing Member must obtain the consent of the SwapClear Clearing Client(s) to which the Stress Loss Margin applies. In making any request pursuant to this paragraph, the SwapClear Clearing Member is deemed to represent that it has obtained such consent.

Where SwapClear Contracts entered into by a SwapClear Clearing Member in respect of a SwapClear Clearing Client which has requested to pay Stress Loss Margin are transferred to a Backup Clearing Member or a Receiving Clearing Member (including an FCM Clearing Member), such Backup Clearing Member or Receiving Clearing Member may be required to pay additional initial margin to the Clearing House in the event that it does not pay Stress Loss Margin with respect to the transferring SwapClear Clearing Client(s).

1.10 **Tenor Basis Risk Margin Add-on**

An add-on margin requirement will be applied in respect of tenor basis risk.

1.11 **Intra-Day Margin Call: Collateral Management**

The methods for covering intra-day margin calls are set out in Section 1.11 of Procedure 4 (*Margin and Collateral*).

1.12 **Price Alignment Interest (PAI) and Price Alignment Amount Rate**

The calculation of PAI and Price Alignment Amount shall use the applicable interest rate specified and published on the Clearing House's website.

The Clearing House shall not change the interest rates used for the calculation of PAI and Price Alignment Amount in respect of USD, EUR, GBP, JPY and CHF without the consent of all SwapClear Clearing Members holding open [SwapClear C](#)ontracts in such currencies.

Notwithstanding the foregoing, in the event the interest rate source used for the calculation of PAI or Price Alignment Amount for USD, EUR, GBP, JPY or CHF (i) is unavailable (including where such rate ceases, or will cease, to be provided by its administrators), (ii) is not sufficiently robust, (iii) is not fit for purpose or (iv) has

materially changed, in each case as determined in the Clearing House's sole discretion, the Clearing House may use an alternative interest rate without the consent of such SwapClear Clearing Members.

If the Clearing House chooses an alternative interest rate for the purposes of calculating PAI and Price Alignment Amount pursuant to ~~the immediately foregoing paragraph~~this Section 1.12, it shall notify all SwapClear Clearing Members in writing by delivering a Rate Change Notice.

1.13 **Transfer of SwapClear Contracts between Client Accounts and Proprietary Accounts**

1.13.1 If at any time an early termination date (howsoever described) occurs in respect of one or more of the transactions between a SwapClear Clearing Member and a SwapClear Clearing Client in respect of which such SwapClear Clearing Member (i) is a party to Related SwapClear Contracts and (ii) at the time of such early termination date, is not a Defaulting SCM, that SwapClear Clearing Member may instruct the Clearing House to transfer the relevant Related SwapClear Contracts from its Client Account to its Proprietary Account.

For the purposes of this Section 1.13.1 below a "**Related SwapClear Contract**" means, in respect of a transaction between a SwapClear Clearing Member and a SwapClear Clearing Client which has been terminated on an early termination date, the open position represented by the SwapClear Contract entered into with the Clearing House by such SwapClear Clearing Member on behalf of the relevant SwapClear Clearing Client on equal and opposite terms to such transaction.

A transfer pursuant to this Section 1.13.1 will be subject to receipt by the Clearing House of the following:

- (a) a copy of the notice from the relevant SwapClear Clearing Member to the relevant SwapClear Clearing Client or from the relevant SwapClear Clearing Client to the relevant SwapClear Clearing Member designating the relevant early termination date or, if such early termination date has occurred automatically, evidence of the relevant event of default or termination event;
- (b) a copy of a notice served by the relevant SwapClear Clearing Member on the relevant SwapClear Clearing Client alerting that SwapClear Clearing Client of its intention to request a transfer of the relevant Related SwapClear Contracts pursuant to this Section 1.13; and
- (c) an indemnity from the relevant SwapClear Clearing Member in a form suitable to the Clearing House

The Clearing House will usually arrange a transfer of Related SwapClear Contracts within 24 hours of receipt (to the extent applicable) of the documents listed in paragraphs (a) to (c) above.

Appendix II
LCH Limited FCM Procedures
Changed Pages



FCM PROCEDURES OF THE CLEARING HOUSE

LCH LIMITED

On the date of registration, the Net Present Value of an FCM SwapClear Contract will be calculated in accordance with Section 2.1.7(a).

On all subsequent days, the change in the Net Present Value from one Business Day to the next will be calculated by the Clearing House.

Separate Variation Settlement calculations are performed in respect of an FCM Clearing Member's house "H" account and in respect of an FCM Clearing Member's client "C" account. No offset between the "C" and the "H" accounts is permitted. The Clearing House shall make or receive a separate Variation Settlement payment in respect of each house "H" account and each client "C" account (subject to the netting provisions of FCM Regulation 47 and the Default Rules) of each FCM Clearing Member.

(e) *Price Alignment Amount (PAA)*

~~The payment of Variation Settlement by the applicable party on a daily basis would, without adjustment, distort the pricing for certain FCM SwapClear Transactions cleared through the Clearing House. In order to minimise the impact of such Variation Settlement payments, the Clearing House will, for an FCM Clearing Member, either (i) charge a Price Alignment Amount if that FCM Clearing Member has, on a cumulative net basis, received Variation Settlement from the Clearing House, or (ii) pay a Price Alignment Amount if that FCM Clearing Member has, on a cumulative net basis, paid Variation Settlement to the Clearing House. In a negative interest rate environment where the applicable Price Alignment Amount rate is negative, the Clearing House will, for an FCM Clearing Member, either (i) pay a Price Alignment Amount if that FCM Clearing Member has, on a cumulative net basis, received Variation Settlement from the Clearing House, or (ii) charge a Price Alignment Amount if that FCM Clearing Member has, on a cumulative net basis, paid Variation Settlement to the Clearing House. order to compensate for the payment of changes in NPV on a daily basis for FCM SwapClear Transactions cleared through the Clearing House, the Clearing House will for each FCM Clearing Member either charge or pay Price Alignment Amount in accordance with Section 3.5.2. PAA is debited, credited and netted in accordance with FCM Regulation 47 and the Clearing House's normal practices.~~

(f) *Non-deliverable Interest Rate Swaps*

The Clearing House will calculate variation margin, NPV Payments and ~~Price Alignment Amounts~~^{PAA} in relation to FCM SwapClear Contracts that are non-deliverable interest rate swaps in USD, and all amounts due or payable under such FCM SwapClear Contracts must be paid in USD.

2.1.8 *Coupon Payments*

Default Rules and other applicable provisions of the FCM Rulebook) that will apply under such circumstances.

In certain circumstances the Clearing House may deem, in its sole discretion, that the FCM Rates Contracts of one or more FCM Clients should be liquidated. Such determination may result from factors including: (i) the Clearing House determining that the FCM Client poses too great a risk to the Clearing House and should therefore be liquidated, (ii) the Clearing House becoming aware of the FCM Client becoming insolvent or otherwise failing in its obligations to the defaulting FCM Clearing Member, (iii) the relevant FCM Client requesting that it be liquidated, or (iv) a request or instruction from a Regulatory Body, whether orally or in writing. In the event of such liquidation the Clearing House shall establish a notional account reflecting such FCM Client's FCM Rates Contracts for purposes of allocating losses arising from the liquidation of such contracts (such account, a "**Hedged Account**"). The Clearing House may establish one or more separate Hedged Account(s) for FCM Rates Contracts that are non-transferable and will be subject to liquidation and, if applicable, may reference in each such Hedged Account the FCM Rates Contracts that are to be liquidated, regardless of the FCM Clients for which such FCM Rates Contracts are held. The provisions of this section shall apply equally to any such Hedged Account. Additionally, no FCM Contracts other than FCM Rates Contracts will be referenced in a Hedged Account established for liquidating FCM Rates Contracts.

An FCM Client whose FCM Rates Contracts are referenced in a Hedged Account is referred as a "**Non-Porting Client**". The Clearing House shall hold the relevant Collateral in respect of: (a) the FCM SwapClear Contracts of Non-Porting Clients (segregated as belonging to each such applicable Non-Porting Client in accordance with the CFTC Regulations and Part 22 thereof) in the relevant FCM Omnibus SwapClear Client Account with LCH; and (b) the FCM Listed Interest Rates Contract of Non-Porting Clients in the relevant FCM Omnibus Listed Interest Rates Client Account with LCH, in each case until the liquidation of the entire relevant Hedged Account and all FCM Rates Contracts and other positions therein, as described below. At the time that the FCM Rates Contracts of a Non-Porting Client are first referenced in a Hedged Account, any outstanding and accrued but unpaid Variation Settlement, daily settlement amounts or Price Alignment Amounts~~PAA~~ in respect of such FCM Rates Contracts shall be discharged as of the time such FCM Rates Contracts are referenced in such Hedged Account, by (i) in the event that Variation Settlement, daily settlement amounts or Price Alignment Amounts~~PAA~~ are accrued but unpaid in favor of the Clearing House, debiting (x) the FCM Client Sub-Account of such FCM Client (in respect of FCM SwapClear Contracts) or (y) the FCM Omnibus Listed Interest Rates Client Account with LCH (in respect of FCM Listed Interest Rates Contracts), or (ii) in the event that Variation Settlement, daily settlement amounts or Price Alignment Amounts~~PAA~~ are accrued but

unpaid in favor of the FCM Client, crediting (x) the FCM Client Sub-Account of such FCM Client (in respect of FCM SwapClear Contracts) or (y) the FCM Omnibus Listed Interest Rates Client Account with LCH (in respect of FCM Listed Interest Rates Contracts).

- (A) Administration of a Hedged Account. The Clearing House may enter into hedge transactions and liquidate and/or auction the FCM Rates Contracts and hedges for the account of the Hedged Account, and may take related actions with respect to a Hedged Account (and the positions referenced therein), in its sole discretion as permitted by the FCM Rulebook, the CEA and the CFTC Regulations, or as directed by an applicable Regulatory Body.
- (B) Allocation of Gains and Losses in a Hedged Account to Non-Porting Clients. The Clearing House will allocate losses and gains (including further Variation Settlement, daily settlement amounts or Price Alignment Amounts^{PAA}, hedging costs including the gains and losses associated with hedging transactions, and liquidation/auction costs and losses) to Non-Porting Clients in a Hedged Account in accordance with the following provisions:
 - (A) At the time an FCM Client becomes a Non-Porting Client, such Non-Porting Client is assigned a separate risk factor in respect of its FCM SwapClear Contracts (if any) and its set of FCM Listed Interest Rates Contracts (if any) (each, an “**Account Class Risk Factor**”). The value of each Account Class Risk Factor is calculated as the proportion of such Non-Porting Client's hypothetical (where applicable) Required Margin in respect of each set of contracts in a given currency bears to the aggregate hypothetical Required Margin of all contracts that are referenced in the Hedged Account in that currency at the time such FCM Client became a Non-Porting Client (*i.e.*, at the time such contracts are first referenced in such Hedged Account).
 - (B) On the first day that FCM Clients become Non-Porting Clients, gains and losses in a Hedged Account on such day shall be allocated on a *pro rata* basis among such Non-Porting Clients based on their individual Account Class Risk Factors. The allocation of gains and losses on subsequent days shall be made in the same manner until the occurrence of a day (if applicable) in which additional Non-Porting Clients are referenced in such Hedged Account. Additional Non-Porting Clients whose positions are referenced in such Hedged Account on a subsequent day, until the positions of further additional Non-Porting Clients are referenced in such

If a change is declared that affects the SwapsMonitor Financial Calendar that is referenced on FCM ForexClear, then a corresponding calendar adjustment will be made to the FCM ForexClear system, unless the Clearing House informs FXCCMs by notice on its website (at <https://www.lch.com/services/forexclear>, or such other web page as the Clearing House determines) that the relevant change will not apply to FCM ForexClear Contracts.

The Clearing House may temporarily close the FCM ForexClear Service to process a calendar adjustment in its clearing system. FX FCMs will be notified in advance of the date, time and expected duration of such closure.

Date Adjustment:

As a result of the calendar adjustment process, the Valuation Date, the Settlement Date and/or Premium Payment Date of any affected FCM ForexClear Contracts will automatically be adjusted in accordance with the provisions of the Relevant EMTA Template, relevant LCH G10 Contract Template or ISDA definitions as applicable.

The Clearing House will notify the FX FCMs via file download from the Clearing Member Reporting as to any FCM ForexClear Contracts affected and the date adjustments made.

2.2.9 **Market Data**

(a) *Sources used by FCM ForexClear Service*

The FCM ForexClear Service collates instrument quotes for the following from multiple market sources (as detailed in Section 2.2.9(b)) in relation to each Currency Pair:

- (A) FX spot rates (“**FX Spot Rates**”);
- (B) FX swap points (“**FX Swap Points**”);
- (C) Settlement Rate Option;
- (D) Interest rate curves and overnight index swap curves (“**Interest Rate Curves**”);
- (E) Price Alignment Amount^{PAA} rates — (“Price Alignment Amount^{AA} Rates”); and
- (F) Country credit spreads (see Section 2.2.9(f) below) (“**Country Credit Spreads**”),

together, “**Market Data**”.

FX Spot Rates and FX Swap Points are received by the Clearing House via a live link from all eligible FXCCMs (including FX FCMs) during the Opening Hours.

(b) *Market Data Sources and Frequencies*

The Clearing House receives the following updated raw prices:

FX Spot Rates:

- (A) Source – FXCCMs.
- (B) Frequency - every time updated by FXCCMs— up to a maximum rate of once every five minutes.

FX Swap Points:

- (i) Source - all FXCCMs.
- (ii) Frequency - every time updated by FXCCMs up to a maximum rate of once every five minutes.
- (iii) Tenors – as shown in the table below.

Tenor
O/N
T/N
S/N
1 week
1 month
2 months
3 months
6 months
9 months
12 months
24 months
36 months
48 months
60 months

Settlement Rate Options:

- (i) Source - Reuters.
- (ii) Frequency - when published (as referenced in the Relevant ETMA Template or given LCH G10 Contract Template, as applicable).

Interest Rate Curves:

- (i) Source - internal Clearing House

- (ii) Frequency - at each SwapClear margin run.

Country Credit Spreads:

- (i) Source - Bloomberg.
- (ii) Frequency - when published.

USD LIBOR Curve:

- (i) Source - SwapClear.
- (ii) Frequency - at each SwapClear margin run.

Price Alignment AmountPAA rates:

- (i) Source - LCH Treasury.
- (ii) Frequency - Daily.

~~(e)~~ [Not Used]

~~(d)~~(c)

~~(e)~~(d) *Market Data Provision to FX FCMs*

Market Data used in a Margin Run is made available to FX FCMs via ForexClear Reporting (as defined in Section 2.2.24).

~~(f)~~(e) *Curve Building in ForexClear*

FX Curve (Zero Coupon/Market Rate Curve):

The Clearing House builds for each Currency Pair an FX curve (zero coupon/market rate curve) using the FX Spot Rates, FX Swap Points and the USD LIBOR Curve based on interpolation techniques agreed through the ForexClear Risk & Trading Working Group (a group comprising the Clearing House's and FXCCM's (including FX FCM) risk and trading representatives) (“RTWG”). The USD LIBOR Curve is used for discounting; the FX curve is used for capitalization of forward cash flows.

Interest Rate Curve:

The Clearing House applies the linear interpolation method to build the Interest Rate Curve. Linear interpolation is applied on zero coupon curves.

Curve Use:

End of day is defined as 22.00 hours, London time (“EOD”). The following EOD data is used in the calculation of risk analytics for an EOD Margin Run (as defined in Section 2.2.16(b)):

- (A) FX Spot Rates; and
- (B) FX Swap Points.

~~(g)~~(f) *Country Credit Spreads*

The Clearing House takes country credit spreads (in relation to Brazil, Russia, India, China, Chile, South Korea, Colombia, Indonesia, Malaysia, Philippines and Taiwan) from Bloomberg for use in risk multiplier calculations.

2.2.10 *FCM ForexClear Contract Valuation*

(a) *Net Present Value (“NPV”)*

From (and including) the Registration Time to the EOD Margin Run on the business day preceding the Valuation Date, each FCM ForexClear Contract is valued in USD using the current market rates and discounted from the future Settlement Date to its present value.

On the Valuation Date, the Settlement Rate is used to value the FCM ForexClear Contract.

If Valuation Postponement applies, the FCM ForexClear Contract is valued using the current forward price to (and including) the date on which the Settlement Rate is determined in accordance with the FCM ForexClear Contract Terms.

In the event a Settlement Rate or market rate is unavailable, as determined by the Clearing House in its sole discretion, the Clearing House will determine an alternative Settlement Rate or market rate.

(b) *Variation Settlement (“VS”)*

VS for each FCM ForexClear Contract is calculated at EOD as the change from the preceding business day in its NPV. With respect to each FX FCM, the net sum of the VS for all open FCM ForexClear Contracts is, subject to the netting provisions of FCM Regulation 47, credited to or debited from such FX FCM once a day, following the EOD Margin Run.

VS will, subject to the netting provisions of FCM Regulation 47, be paid each business day by or to each FX FCM in respect of all of its open FCM ForexClear Contracts. The VS will be calculated in, and must be paid in, USD.

With respect to each FCM ForexClear Contract, VS is calculated every business day from (and including) the Registration Time to (and including) the EOD on the business day immediately preceding the Settlement Date.

Separate Variation Settlement calculations are performed in respect of an FCM Clearing Member's house "H" account and in respect of an FCM Clearing Member's client "C" account. No offset between the "C" and the "H" accounts is permitted. The Clearing House shall make or receive a separate Variation Settlement payment with respect to each house "H" account and each client "C" account (subject to the netting provisions of FCM Regulation 47 and the Default Rules).

(c) *Reporting Breakdown*

ForexClear margin reports show the portfolio of open FCM ForexClear Contracts of each FX FCM by Currency Pairs and in the Settlement Currency (i.e., USD).

(d) *Price Alignment Amount* (~~"PAA"~~)

The effect of daily cash VS movements results in the need for Price Alignment Amounts~~PAA~~. Without this adjustment, the pricing of FCM ForexClear Contracts would differ from identical uncleared trades, as cash earned from favorable daily price moves would be priced into the product.

(e) *Price Alignment Amount*~~PAA~~ *Calculation Methodology*

Price Alignment Amounts ~~are~~~~PAA~~ ~~is~~ calculated at EOD on each business day from (and including) the first business day after the Trade Date to (and including) the business day immediately preceding the Settlement Date.

In this Section 2.2.10(e), "T" means any given business day; "T-1" means the business day immediately preceding T; "T+1" means the business day immediately following T; and "**Cumulative Variation Settlement**" or "**CVS**" means, in respect of a Swap Product, a value equal to the aggregate of the amounts of Variation Settlement that have become owing from the FCM Clearing Member to the Clearing House in respect of such Swap Product minus the aggregate of the amounts of Variation Settlement that have become owing from the Clearing House to the FCM Clearing Member in respect of such Swap Product; provided that any such amounts shall only be counted to the extent the FCM Clearing Member or Clearing House, as applicable, has discharged its obligation to transfer such amounts in accordance with FCM Regulation 47. The Clearing House calculates Price Alignment Amounts~~PAA~~ in USD once a day at EOD.

Principles:

- (A) CVS is calculated at EOD on T-1.
- (B) Variation Settlement in respect of an FX FCM's portfolio of open ForexClear Contracts is paid/received, subject to the netting provisions of FCM Regulation 47, on the morning of T.
- (C) The Price Alignment AmountPAA Rate for T to be applied is known at EOD T.
- (D) The Price Alignment AmountPAA is calculated on the night of T, for CVS of T-1 for FCM ForexClear Contracts up to the business day before their Settlement Date.
- (E) The Price Alignment AmountPAA is paid/received on morning of T+1 via PPS.

Components:

- (A) Price Alignment AmountPAA Rate.
- (B) Cumulative Variation Settlement of the FX FCM's portfolio open FCM ForexClear Contracts.
- (C) Accrual Factor (factor used to convert the Price Alignment AmountPAA Rate from an annual rate to a daily rate, on a basis of a year of 360 days).

So:

- (A) $\text{Price Alignment AmountPAA}_T = \text{Price Alignment AmountPAA}_T \text{ Rate} \times \text{CVS}_{T-1} \times \text{Accrual Factor}$.

The Clearing House uses the Price Alignment AmountPAA Rate from the relevant EOD overnight index swap curves, which is sourced from the Clearing House.

2.2.11 **Initial Margin ("IM")**

The Clearing House will require FX FCMs to furnish it with IM. This amount will be calculated intraday and at EOD on each business day as part of each Margin Run. Each FX FCM's IM requirement is calculated for the portfolio of open FCM ForexClear Contracts and FCM ForexClear Transactions using ForexClear's Portfolio Analysis and Risk ("FxPAR") margining model. FxPAR is based on a modified filtered historical simulation value-at-risk methodology. All open FCM ForexClear Contracts and FCM ForexClear Transactions in each Currency Pair are re-valued under a series of cross portfolio yield curve scenarios to estimate the potential portfolio profit and loss and therefore the IM requirement.

(a) *General – Intra-day Margining*

Following an intra-day margin call (except as notified otherwise by an FX FCM at the time of an intra-day margin call), the Clearing House will deduct cash, in the appropriate currency, directly from the relevant FX FCMs PPS account to cover that intra-day margin call.

Cash payments in respect of intra-day Margin are accepted only in USD by the Clearing House.

Each FCM Clearing Member must ensure that it has sufficient cash funds in place with their PPS bank(s) in order to avoid any intra-day liquidity issues.

2.2.15 *General Margining Process*

A “**Margin Run**” is the process by which the Clearing House calculates an FX FCM's Initial Margin requirement (if any) and, during an EOD Margin Run, its Variation Settlement and **Price Alignment Amount**^{PAA} requirements (together, its “**Transfer Requirements**”) and applies that FX FCM's Margin to satisfy the Transfer Requirements for that FX FCM in respect of the FCM ForexClear Contracts within that FX FCM's portfolio.

2.2.16 *Types of Margin Runs*

There are three types of Margin Run:

(a) *ITD / Ad Hoc – Day Margin Run*

ITD/Ad-hoc London daytime Margin Runs are initiated as and when dictated by the schedule published by the Clearing House and notified to FX FCMs from time to time (the “**Schedule**”) or as necessary, and are performed in the time period during which a PPS call can be made (the “**ITD/Ad-hoc Day Margin Run**”). PPS times are published on the Clearing House's website at: <http://www.lch.com/risk-collateral-management/collateral-management/protected-payments-system>.

ITD/Ad-hoc Margin Runs are calls in respect of Initial Margin only. Variation Settlement and **Price Alignment Amounts**^{PAA} are not included in ITD/Ad-hoc Margin Runs.

(b) *EOD Margin Run*

The EOD Margin Run is the final ITD/Ad-hoc Day Margin Run that completes by 24:00 hours, London time, on that business day (the “**EOD Margin Run**”).

EOD Margin Runs are calls in respect of Initial Margin as well as Variation Settlement, NSA and **Price Alignment Amounts**^{PAA}.

(c) *ITD / Ad Hoc - Night Margin Run*

ITD/Ad-hoc London overnight Margin Runs are initiated as and when dictated by the Schedule or as necessary, and are performed in the time period during which a PPS call cannot be made (the “**ITD/Ad-hoc Night Margin Run**”).

ITD/Ad-hoc Night Margin Runs are calls in respect of Initial Margin only. Amounts that are anticipated to be owed in respect of Variation Settlement, NSA and Price Alignment AmountsPAA may be considered in the determination of the amount of Initial Margin called in such ITD/Ad-hoc Night Margin Run.

2.2.17 **Margin Run Process**

Margin Runs cover all registered FCM ForexClear Contracts with the status “NOVATED”.

Margin runs will be carried out for each FCM ForexClear Contract and FCM ForexClear Transaction (as the case maybe) until (and including) the later of:

- (a) EOD Margin Run on the Settlement Date; or
- (b) EOD Margin Run after the Settlement Rate is published.

During every Margin Run the Clearing House calculates the Initial Margin required and (where applicable) the Variation Settlement and Price Alignment AmountsPAA required to cover each FX FCM's relevant open FCM ForexClear Contracts and FCM ForexClear Transactions (each a “**Liability**” and together the “**Liabilities**”).

Each FX FCM's Liability is offset against that FX FCM's non-cash Collateral account (being a sub-account of the FX FCM's financial account) (for IM only) or funds in that FX FCM's cash account (being a sub-account of the FX FCM's financial account) (for VS/Price Alignment AmountsPAA/IM). Initial Margin will always be a Liability (payable to the Clearing House) and Variation Settlement, NSA and Price Alignment AmountsPAA may be a cash posting or a Liability (payable by, or to, the Clearing House, respectively).

FX FCMs are informed via email of their Liabilities as a percentage of their current total cover (such percentage being shown as a percentage of the aggregate cover in their cash and non-cash Collateral account(s)) and are directed to the ForexClear Services portal (being a secure website made available to FXCCMs) (the “**ForexClear Service Portal**”) which provides reports (at the times specified in Section 2.2.242-2.24) informing FX FCMs of their (i) total Liabilities under the FCM ForexClear Service; (ii) current total cover posted with the Clearing House for the FCM ForexClear Service (including MER Buffer and/or ForexClear Tolerance, if any); and (iii) Liabilities as a percentage of their current total cover (such percentage being shown as a percentage of the aggregate cover in their cash and non-cash Collateral account(s)).

(d) *Trade Fixing and Settlement Reports*

Reports are published on each business day detailing the FCM ForexClear Contracts to which the Settlement Rate has been applied on that business day (the “**NDF Fixings**” report), FCM ForexClear Contracts that have been settled during that current business day (the “**Settlements Today**” report) and FCM ForexClear Contracts that will settle the next business day (the “**NDF's Fixed with Settlement Tomorrow**” report).

(e) *Fees Reports*

Reports on trading volumes on a daily and monthly basis are provided to FX FCMs. Monthly reports are provided on the last business day of each month. They include the full trading volumes on which the monthly transaction fees will be charged to those FX FCMs choosing to have tariffs levied per transaction.

(f) *Banking Reports*

Follow this link:

<https://www.lch.com/membership>

(g) *Real-time Reporting*

A near real-time view of member liabilities, Collateral pledged, Margin and credit utilization will be available from the ForexClear Service Portal (referred to in Section ~~2.2.17~~~~2.2.17~~).

In accordance with CFTC Part 45 requirements (where the FX FCM has a reporting obligation), FX FCMs must provide the Clearing House (i) the USI of the original swap that is submitted to the Clearing House for registration and (ii) the LEI of the original swap SDR (i.e., “OriginalSwapRepository” or equivalent field) to enable the Clearing House to accurately report the termination of the original swap to the appropriate SDR.

2.2.25 *Treasury Operations & Collateral Management*

(a) *Cover Distribution*

The Clearing House nets each FX FCM's Liabilities (i.e., margins, settlements, ~~Price Alignment Amounts~~~~PAA~~ and multipliers) and then the total of Cash collateral and non-cash Collateral are applied to offset those net Liabilities. This process is known as cover distribution (“**Cover Distribution**”). FX FCMs can choose whether cash or non-cash Collateral should be applied first. At the end of this process, if an FX FCM has a shortfall, a PPS (as defined in Section ~~2.2.25(c)~~~~2.2.25(e)~~ below) call for additional Collateral, settlement ~~amounts~~ or ~~Price Alignment Amounts~~~~PAA~~ is made.

Clearing House becoming aware of the FCM Client becoming insolvent or otherwise failing in its obligations to the defaulting FCM Clearing Member, (iii) the relevant FCM Client requesting that it be liquidated, or (iv) a request or instruction from a Regulatory Body, whether orally or in writing. In the event of such liquidation the Clearing House shall transfer (either physically or by book-entry) such FCM Client's FCM ForexClear Contracts to be liquidated into an account at the Clearing House established for purposes of liquidating the FCM ForexClear Contracts of FCM Clients of the defaulter (such account, a "**Hedged Account**"). The Clearing House shall establish a separate Hedged Account for each currency of FCM ForexClear Contracts that are non-transferable and will be subject to liquidation and will include in such Hedged Account the FCM ForexClear Contracts in the applicable currency that are to be liquidated, regardless of the FCM Clients for which such FCM ForexClear Contracts are held. The provisions of this section shall apply equally to any such Hedged Account. Additionally, no FCM Contracts other than FCM ForexClear Contracts will be transferred into a Hedged Account established for liquidating FCM ForexClear Contracts.

An FCM Client whose FCM ForexClear Contracts are transferred into a Hedged Account is referred to as a "**Non-Porting Client**". The Clearing House shall hold the relevant Collateral in respect of Non-Porting Client (segregated as belonging to each such applicable Non-Porting Client in accordance with the CFTC Regulations and Part 22 thereof) in its applicable FCM Omnibus ForexClear Client Account with LCH of the Defaulter until the liquidation of the entire Hedged Account and all FCM ForexClear Contracts and other positions therein, as described below. At the time that the FCM ForexClear Contracts of a Non-Porting Client are transferred into a Hedged Account, any outstanding and accrued but unpaid Variation Settlement and Price Alignment AmountPAA in respect of such FCM ForexClear Contracts shall be discharged as of the time such FCM ForexClear Contracts are transferred into the Hedged Account, by (i) in the event that Variation Settlement or Price Alignment AmountPAA is accrued but unpaid in favor of the Clearing House, debiting the relevant FCM Client Sub-Account of such FCM Client, or (ii) in the event that Variation Settlement or Price Alignment AmountPAA is accrued but unpaid in favor of the FCM Client, crediting the relevant FCM Client Sub-Account of such FCM Client.

- (A) *Administration of a Hedged Account.* The Clearing House may enter into hedge transactions and liquidate and/or auction the FCM ForexClear Contracts and hedges for the account of the Hedged Account, and may take related actions with respect to a Hedged Account (and the positions held therein), in its sole discretion as permitted by the FCM Rulebook, the CEA and the CFTC Regulations, or as directed by an applicable Regulatory Body.

- (B) *Allocation of Gains and Losses in a Hedged Account to Non-Porting Clients.* The Clearing House will allocate losses and gains (including further Variation Settlement and Price Alignment Amount~~PAA~~ changes, hedging costs including the gains and losses associated with hedging transactions, and liquidation/auction costs and losses) to Non-Porting Clients in a Hedged Account in accordance with the following provisions:
- (A) At the time an FCM Client becomes a Non-Porting Client, such Non-Porting Client is assigned a risk factor (a “**Risk Factor**”) which is equal to such Non-Porting Client's Required Margin with respect to its FCM ForexClear Contracts that are transferred into the Hedged Account at the time such FCM Client became a Non-Porting Client (*i.e.*, at the time of transfer into the Hedged Account).
- (B) On the first day that FCM Clients become Non-Porting Clients, gains and losses in the Hedged Account on such day shall be allocated on a *pro rata* basis among such Non-Porting Clients based on their individual Risk Factors. The allocation of gains and losses on subsequent days shall be made in the same manner until the occurrence of a day (if applicable) in which additional Non-Porting Clients are included in the Hedged Account. Additional Non-Porting Clients that are included in the Hedged Account on a subsequent day, until further additional Non-Porting Clients are included in the Hedged Account on a further subsequent day, are referred to as “**New Non-Porting Clients**”.
- (C) On a day when one or more New Non-Porting Clients are included in the Hedged Account, the Clearing House shall calculate a combined risk factor (the “**Existing Non-Porting Clients Combined Risk Factor**”) in respect of the Non-Porting Clients that were previously included in the Hedged Account and are not New Non-Porting Clients (such existing Non-Porting Clients, “**Existing Non-Porting Clients**”). The Existing Non-Porting Clients Combined Risk Factor shall be based on the amount of Required Margin associated with the Hedged Account with respect to all positions (including all FCM ForexClear Contracts, hedges or other positions) held in the Hedged Account, at the beginning of the day on which New Non-Porting Clients are included in the Hedged Account (*i.e.*, at a time prior to the transfer of the FCM ForexClear Contracts of New Non-Porting Clients into the Hedged Account). For the avoidance of doubt, the Existing Non-Porting Clients Combined Risk Factor is

(i) *Use of UK PPS and US PPS*

These FCM Procedures indicate which part of the PPS system will be used in the normal course of events for making PPS calls. Generally, UK PPS will be used for Morning PPS calls (including Contributions to the default fund), remitting surplus cash balances to an FCM Clearing Member, and for making intra-day margin calls up to 16:00 London time. However, FCM Clearing Members should be aware that the Clearing House reserves the right to direct a Morning PPS call or intra-day margin calls before 16:00 London time to an FCM Clearing Member's US PPS account in exceptional circumstances (an “**Exceptional PPS Call**”). The Clearing House will use all reasonable commercial efforts to notify the FCM Clearing Member in advance of issuing any such Exceptional PPS Call.

(j) *Contingency Payment Arrangements*

FCM Clearing Members are required to have contingency payment arrangements in place to ensure that they can continue to meet their margin, Variation Settlement, Price Alignment Amount^{PAA} and other obligations in the event of failure of their nominated PPS bank. During the application process, the Clearing House will require the applicant to provide evidence of these arrangements and will test these prior to the applicant becoming an FCM Clearing Member. The FCM Clearing Member will be required to provide evidence of their contingency payment arrangements on an ongoing basis at the Clearing House's request.

(k) *Recovery from Insolvent PPS Banks*

In the event that payment is not completed by the relevant PPS bank, due to insolvency rather than technical failure, and the affected FCM Clearing Member(s) make alternative payments, should the Clearing House make a recovery from the estate of the PPS bank, it will credit such recovery, net of costs, to the accounts of the affected FCM Clearing Members in proportion to the amount of the original missed payment.

3.3 **Acceptable Forms of Cover**

The Clearing House accepts certain types of securities and cash in the Clearing House's prescribed form as Collateral against liabilities of the relevant FCM Clearing Member.

Please refer to the following link for further details:

http://www.lch.com/risk_management/ltd/acceptable_collateral.asp

The Clearing House may vary, at its discretion, the standard requirements and valuation procedures set out in this Section, either generally or in a particular case, without giving prior written notice to FCM Clearing Members. Further, the Clearing

3.4.4 *Use of a Defaulter's cover*

Post-default the Clearing House is entitled to realize and/or apply a Defaulter's cover in whatever order it deems appropriate.

3.5 **Interest, Price Alignment AmountPAA and Accommodation Charge Structure**

3.5.1 *Cash Balance Interest Rate*

The Clearing House applies interest to FCM Clearing Members' cleared cash balances. The following rates are applied:

- (a) LDR – London Deposit Rate – the rate at which the Clearing House will pay or charge interest on credit cash balances (excluding Contributions). The LDR calculation methodology utilizes published market rates minus a spread. The current spread rates are published on the LCH website at the following link: http://www.lch.com/fees/ltd/custody_services.asp;
- (b) CDR – Client Deposit Rate – the rate at which the Clearing House will pay or charge interest on credit cash balances on Client financial accounts. The CDR calculation methodology utilizes published market rates minus a spread. The current spread rates are published on the LCH website at the following link: http://www.lch.com/fees/ltd/custody_services.asp; and

For the avoidance of doubt, the Clearing House may apply a different or separate LDR or CDR on FCM Clearing Member's cleared cash balances with respect to each Service.

- (c) Default Fund Rate.

Rates are available from the Member Reporting Website.

The Clearing House reserves the right to alter the basis of calculating each above listed interest rates. Any alteration will be effective on the date notified.

Where the Clearing House provides FCM Clearing Members with at least three days written notice (which may be way of member circular), the Clearing House may increase or decrease the LDR by up to 10bps. The foregoing shall not apply in the event of extreme market conditions, during which the Clearing House may freely and without notice increase or decrease the LDR for up to five consecutive Business Days.

Where the Clearing House provides FCM Clearing Members with two weeks' written notice (which may be way of member circular), the Clearing House may increase or decrease the CDR. In the event of extreme market conditions, the Clearing House may freely and without notice increase or decrease the CDR for up to five consecutive Business Days.

3.5.2 *Price Alignment Amount (PAA) Rate*

To minimize the impact of daily cash Variation Settlement payments on the pricing of interest rate swaps and inflation swaps, the Clearing House will charge or pay PAA in respect of these instruments.

The calculation of the Price Alignment Amount PAA shall use the applicable interest rate PAA rates specified and published on the Clearing House's website, as below. ~~The amount of PAA for each currency shall be calculated as:~~

The Clearing House shall not change the interest rates used for the calculation of Price Alignment Amount in respect of USD, EUR, GBP, JPY and CHF without the consent of all FCM Clearing Members holding open FCM SwapClear Contracts in such currencies.

~~The Cumulative Variation Settlement in such currency from the previous Business Day's close of business multiplied by:~~

- ~~(a) — The relevant PAA rate in effect for that day; divided by~~
- ~~(b) — 360; or in the case of AUD, CAD, GBP, HKD, JPY, NZD, PLN, SGD and ZAR, 365.~~

~~In the case of the currencies marked below with an asterisk, the Clearing House, as provided in FCM Regulation 36(b) (*Alteration of FCM Regulations and the FCM Procedures*), specifies that it will not change the PAA rate without the consent of all SwapClear Clearing Members and applicable FCM Clearing Members holding open contracts in such currencies.~~

Currency	PAA Rate
USD*	The rate used shall be the Effective Federal Funds rate, the rate published by the Board of Governors of the Federal Reserve System as such rate appears on Reuters page "FEDFUNDS1" or Telerate 120 or on any successor page(s) thereto.
EUR*	The rate used shall be the EONIA rate, the rate published by the European Banking Federation and ACI — The Financial Market Association as such rate appears on Reuters page "EONIA" or Telerate 247 or on any successor page(s) thereto.
GBP*	The rate used shall be the SONIA rate, the rate published by the Bank of England as such rate appears on Reuters page "SONIA" or on any successor page(s) thereto.
JPY*	The rate used shall be the Mutan call rate, the rate published by the Bank of Japan as such rate appears on Reuters page "TONAR" or on any successor page(s) thereto.
CHF*	The rate used shall be the SARON rate, the rate published by SIX Swiss Exchange Ltd. as such rate appears on Reuters page

<u>Currency</u>	<u>PAA Rate</u>
AUD	“SARON.S” or any successor page(s) thereto. The rate used shall be the “AONIA” rate, the rate published by the Reserve Bank of Australia—as such rate appears on Reuters page “RBA30” or any successor page(s) thereto.
CAD	The rate used shall be the “CORRA” rate, the rate published by the Bank of Canada website—as such rate appears on Reuters page “CORRA” or any successor page(s) thereto.
DKK	The rate used shall be the “DKKOIS” rate, the rate published by the Danish Central Bank—as such rate appears on Reuters page “DKNA14” or any successor page(s) thereto.
HKD	The rate used shall be the “HONIX” rate, the rate published by the Hong Kong Brokers Association—as such rate appears on Reuters page “HONIX” or any successor page(s) thereto.
NZD	The rate used shall be the “NZIONA” rate, the rate published by the Reserve bank of New Zealand—as such rate appears on Reuters page “RBNZ02” or any successor page(s) thereto.
PLN	The rate used shall be the “POLONIA” rate, the rate published by the National Bank of Poland—as such rate appears on Reuters page “NBPS” or any successor page(s) thereto.
SEK	The rate used shall be the “SIOR” rate, the rate published by the OMX Exchange—as such rate appears on Reuters page “SIOR” or any successor page(s) thereto.
ZAR	The rate used shall be the SFX ZAR OND rate, the rate published by SAFEX JIBAR—as such rate appears on Reuters page “SFXROD” or any successor page(s) thereto.
CZK	The rate used shall be the “CZEONIA” rate, the rate published by the Czech National Bank—as such rate appears on Reuters page “CZEONIA” or any successor page(s) thereto.
HUF	The rate used shall be the “HUFONIA” rate, the rate published by the National Bank of Hungary—as such rate appears on Reuters page “HUFONIA” or any successor page(s) thereto.
SGD	The rate used shall be the “SONAR” rate, the rate published by the Association of Banks in Singapore—as such rate appears on Reuters page “ABSIRFIX01” or any successor page(s) thereto.
NOK	The rate used shall be the NOK sight deposit rate, the rate published by Norges Bank—as such rate appears on Reuters page “NOINTR=ECP” or any successor page(s) thereto

~~For currency NOK, PAA is calculated using an appropriate overnight deposit rate for the currency.~~

Notwithstanding the foregoing, in the event the interest rate source used for the calculation of Price Alignment Amount~~PAA~~ (a~~i~~) is unavailable (including where such rate ceases, or will cease, to be provided by its administrator), (b~~ii~~) is not sufficiently robust, (c~~iii~~) is not fit for purpose, or (d~~iv~~) has materially changed, in each case as determined in the Clearing House's sole discretion, the Clearing House may use an alternative interest rate without the consent of such ~~SwapClear Clearing Members and/or~~ FCM Clearing Members.

If the Clearing House chooses an alternative interest rate for the purposes of calculating the Price Alignment Amount pursuant to this Section 3.5.2, the immediately foregoing paragraph it shall notify all ~~SwapClear Clearing Members and~~ FCM Clearing Members within the FCM SwapClear service in writing by delivering a Rate Change Notice.

3.5.3 *Interest Structure*

Application of Collateral	Type of Collateral			
	Securities	Cash	Foreign Cash	Forward Cash
Initial margin after offset	Accommodation Charge Payable	Pay relevant rate	pay relevant rate of Collateral currency	No charge or payment
Excess or Surplus	No charge or payment	Pay relevant rate	Pay relevant rate	No charge or payment

Note:

- 1 "Foreign Cash" means cash in a currency other than that of the liability.
- 2 "Forward Cash" means cash which has been credited to an account for later value (e.g., an amount called via PPS for next-day value).
- 3 Applicable Accommodation Charges are available on the Clearing House's website.

3.5.4 *Payment of Interest and Charges*

Interest, Price Alignment Amounts~~AA~~ and accommodation charges are charged monthly, from the first calendar day to the last calendar day of the current month. Interest and accommodation charges are calculated on a daily basis and the resulting monthly total is posted to FCM Clearing Members' cover accounts for value at close of business on the second business day of the following month. A VAT invoice is also issued on the third business day of each month detailing, ~~PAA~~ Price Alignment Amounts, ~~the~~ interest and accommodation charges applicable for the previous month. Separate invoices are issued for each currency which can be found on the Member Reporting Website.

VAT is charged where relevant, dependent on contract and accommodation charges, at current rates. On foreign currency amounts VAT is charged in sterling on the converted value of any relevant charges. The sterling Collateral account shows separate postings for sterling VAT amounts arising from foreign currency charges.

The net invoice value for each currency is posted to the relevant Collateral account for value on the second working day of the month succeeding the month in which the charges arose.

The invoice provides detail in respect of:

- (a) interest due to be credited or debited;
- (b) [Price Alignment Amounts](#)~~AA~~; and
- (c) accommodation charges;

VAT on accommodation charges is subject to the standard rate, some markets may be excluded.

3.6 Fees

Details of fees and refunds pending are collated during the month.

An invoice or credit note is produced detailing the fees to be furnished with respect to a Proprietary Account to which Margin is attributed.

The invoice/credit note displays the type of fee, contract, future or options type, currency, fee rate, volume, fee amount, VAT amount, sub totals for each fee class and the overall total Collateral in the relevant account.

Monthly postings are processed via the relevant account to which Collateral is posted at the beginning of the following month, on the third working day. Other postings, such as various Market Maker Scheme rebates, are processed by the Clearing House following receipt of data from the relevant Exchange.

3.7 SwapClear Contributions

SwapClear Contributions will be called via PPS on the fourth Business Day of each month or otherwise pursuant to a determination of a SwapClear Contribution under the Default Rules.

Excess SwapClear Contribution amounts due to FCM Clearing Members following a SwapClear Determination Date will (subject to the Default Rules) be repaid to FCM Clearing Members' PPS accounts on the fourth Business Day immediately following such SwapClear Determination Date.

Interest on SwapClear Contributions will be paid to FCM Clearing Members' PPS accounts on the fifth Business Day of each month, in respect of the relevant "interest accrual period" occurring immediately prior to each such Business Day. Interest is calculated in respect of each "interest accrual period", which commences on (and