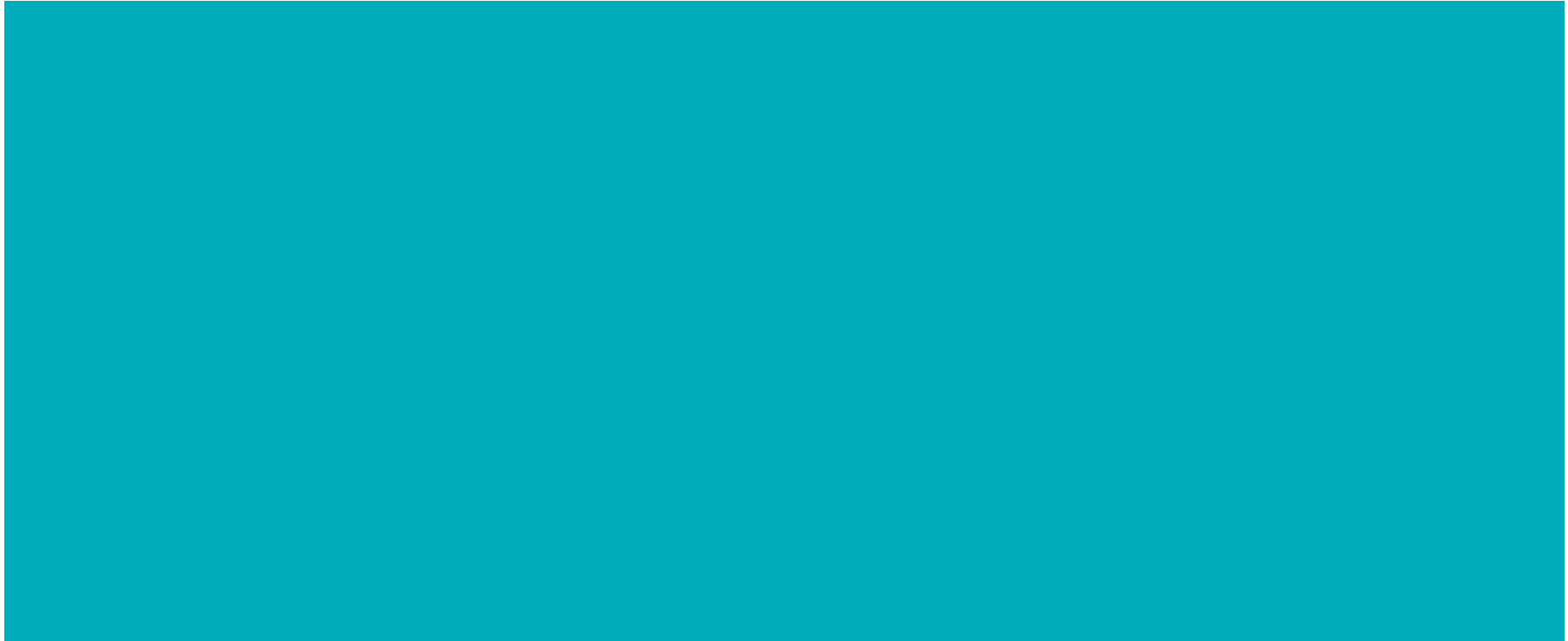


Transition to SOFR discounting in SwapClear



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Summary of LCH's planned approach

In support of the ARRC Paced Transition Plan, LCH plans to transition to SOFR discounting for USD products as follows:

1. LCH plans to change the discounting and PAI/PAA^(*) on all SwapClear USD-discounted products (including inflation, MXN and non-deliverable currencies^(**)) from Fed-Funds to SOFR;
2. LCH plans to apply cash and swap compensation to all accounts with open USD-discounted positions (including inflation, MXN and non-deliverable currencies^(**)) on the conversion date;
3. Client accounts will be able to elect for cash-only compensation by notifying LCH via their Clearing Broker;
4. A cash settlement (auction) process will be used to close out the unwanted compensating swaps and to provide a reference for cash compensation calculations across the whole service;
5. LCH is targeting a conversion date of 16th October 2020.

The above process has been designed to meet the industry-wide objective to transition the cleared swap market to SOFR without compromising market stability or causing unnecessary disruption.

The design is intended to be resilient in a wide range of scenarios, operationally tractable yet with a reasonable degree of flexibility for customers with specific needs.

Key design decisions have been subject to extensive consultation with our members and clients and have been communicated broadly to the market.

(*) Price Alignment Interest/Price Alignment Amount

(**) The eight non-deliverable currencies are KRW, CNY, INR, BRL, COP, CLP, THB, TWD

Introduction: Proposed timeline

Date	Step
Saturday 6 th June 2020	Full operational test of end-to-end processes.
Friday 31 st July 2020	LCH to finalise and publish list of auction participants.
Friday 31 st July 2020	LCH to publish auction proceeds cap array.
Friday 4 th Sep 2020	Notification to LCH of elections for clients opting out of compensating swaps (and into LCH close-out process).
Friday 18 th Sep 2020	LCH to publish indicative size of portfolio.
September 2020 (TBC)	Full operational test of end-to-end processes.
Wednesday 14 th Oct 2020	Calculation of final compensating swap notionals.
Thursday 15 th Oct 2020	Publication of final auction portfolio.
Friday 16 th Oct 2020	Auction event. Calculation of cash compensation amounts.
Saturday 17 th Oct 2020	Booking of cash compensation amounts, compensation swaps and CSP proceeds.
Monday 19 th Oct 2020	All new trades cleared at start of day. Implementation of SOFR discounting at opening.
Tuesday 20 th Oct 2020	Settlement of compensation amounts and CSP proceeds. New trades reported to trade repository.

Value compensation via cash payments

Purpose	<p>The discounting change will give rise to gains and losses in respect of the valuation of USD-discounted portfolios. To address this, LCH plans to support cash compensation by introducing offsetting fees payable to/from the relevant accounts at the point of conversion.</p>
Methodology	<p>Cash compensation amounts will be calculated using the mid prices from the cash settlement auction to derive the SOFR curve (as a spread to the existing USD Fed Funds curve). All USD discounted future cash flows (as calibrated under the Fed Funds discounting regime) are held constant and the compensation amount is calculated as the differential between the present value of these cash flows under the Fed Funds discount regime versus the SOFR discount regime:</p> $\text{Cash compensation amount} = \sum_i \text{NetCashflow}_i \times [DF_i^{\text{Fed Funds}} - DF_i^{\text{SOFR}}] \cdot \frac{1}{DF_{\text{Payment Date}}^{\text{SOFR}}}$ <p>Non-deliverable swaps will be subject to a similar calculation and the relevant compensating amount will be combined with the other US dollar compensation amounts into a single payment.</p> <p>Any Mexican Peso swaps positions will be subject to an FX-adjusted compensation calculation for which payment will be made in Mexican Pesos separately.</p>
Booking	<p>LCH plans to book the compensating amount on <u>a new 1 USD Fed Funds notional swap</u> (T+2 settlement) for all USD and non-deliverable products in every Member and Client clearing account (visible as a new trade as per existing member, client and regulatory reporting specifications).</p> <p>For MXN TIIE swaps LCH plans to book the compensating amount on <u>a new 1 MXN notional swap</u> (T+2 settlement) for every Member and Client account (visible as a new trade as per existing member, client and regulatory reporting specifications).</p> <p>Booking will take place on Saturday October 17th 2020. Trade level breakdown will be available to ensure correct attribution is possible for any users wishing to break the fee down to a detailed level.</p>

Risk compensation via compensating swaps

Purpose	The transition will give rise to a change in discounting risk from Fed Funds to SOFR. The compensating swaps are intended to neutralise the change in discounting risk and provide protection against any price movements during or after the compensation process.
Methodology	<p>LCH will evaluate the change in discounting risk as a result of the switch from Fed-Funds to SOFR discounting and calculate the overall SOFR risk ladder under both regimes. The difference between risk ladders is the change in discounting risk which LCH plans to compensate for.</p> <p>The required compensating risk will be aggregated into compensating swap tenors: 2Y, 5Y, 10Y, 15Y, 20 and 30Y. Any bucket between these main pillar points will be allocated to the nearest two pillars in proportion to the time difference between the relevant pillar points (e.g. 12Y risk will be allocated 60% to 10Y and 40% to 15Y.)</p> <p>The required notional size for each compensating swap is calculated to match the required risk sensitivity (i.e. the delta) in each of the compensating swap tenors.</p>
Booking	<p>Calculations will be performed at the account level for any account with USD discounting risk with reference to the cleared trade population as at close of business of Wednesday 15th October 2020.</p> <p>LCH plans to book the compensating swaps as a pair of outright swaps consisting of:</p> <ul style="list-style-type: none"> i) Receive SOFR, pay fixed (inclusive of spread); and ii) Receive fixed, pay Fed Funds (or vice versa). <p>The fixed coupon will be determined based on the standard LCH Fed Funds outright curve at COB 16th October 2020.</p> <p>Compensating swap notional will be subject to a rounding convention with small positions rounded to zero (meaning no compensating swap will be booked).</p> <p>On 17th October 2020, LCH will book the net compensating swaps (for T+2 settlement), each with its maturity-specific mid spread applied to the SOFR coupon, into each account. LCH will be the counterparty to these trades.</p>

Cash settlement process auction design

Participation	<ul style="list-style-type: none"> ➤ 16 US primary dealer banks expected. ➤ Other institutions & clients wishing to provide liquidity should contact these dealers.
Data publication	<ul style="list-style-type: none"> ➤ LCH plans to publish the size and direction of the auction portfolio in advance to all market participants. ➤ Given the risk is dynamic, LCH is likely to publish interim updates on this information.
Bidding logistics	<ul style="list-style-type: none"> ➤ Individual tenors auctioned separately. ➤ One-way bids will be submitted via the LCH auction platform (web portal). ➤ Partial bids allowed (10-100% of portfolio). ➤ Pricing is Dutch auction-style – all bidders pay the same price.
Mid price determination	<ul style="list-style-type: none"> ➤ Separate two-way auction will determine the reference mid prices for SOFR-FF basis in each tenor. ➤ These results will be used to construct the SOFR curve used as a reference for cash compensation calculations and end-of-day trade valuations on 16th October 2020.
Auction proceed (cost) allocations	<ul style="list-style-type: none"> ➤ Auction proceeds/costs are the difference between the mid in the auction and the best bid(s). ➤ This amount is allocated for each tenor across client accounts in proportion to the notional size of compensating swap that they have opted out of. ➤ Operational process identical to cash compensation, i.e. a fee attached to a \$1 notional FF swap.
Auction proceeds cap	<ul style="list-style-type: none"> ➤ LCH will prescribe a maximum cost per unit risk (dv01) for the auction. ➤ Any bids that would result in the auction proceed cap being exceeded will be excluded.
Auction failure scenario	<ul style="list-style-type: none"> ➤ If insufficient bids within the cap to close out the entire portfolio, clients will be delivered their allocation (based on notional) share of the remaining un-sold positions.

A detailed technical specification is available on the LCH website [\[here\]](#)

Client checklist

<p>Review Indicative Risk Information</p>	<ul style="list-style-type: none"> ➤ Use the <u>LCH SMART / PORTAL tools and reports</u> to review indicative valuation changes, cash compensation and discounting risk changes – clients can access this directly (email RatesClientServices@lch.com) ➤ Visit the <u>LCH PORTAL</u> to review the indicative hedge notionals for the compensating swaps – clients can obtain access to this directly (email RatesClientServices@lch.com) ➤ Review allocations to individual trades/portfolios & consider how to reallocate down to sub-portfolios if required (LCH payments will be made at the clearing account level).
<p>Prepare Operational Process Flows</p>	<ul style="list-style-type: none"> ➤ <u>Work with your CB to ensure you can receive the outlined booking flow</u> for compensating cash payments and compensating swaps. Review expected timings of cash flows. ➤ Review trade messaging (LCH will communicate new cleared trades via Clearlink, but will not message trades to MarkitWire unless clients elect it via ATSS Synchronisation).
<p>Consider Benefits of Swap Compensation</p>	<ul style="list-style-type: none"> ➤ Review LCH technical specification (and supplements) for the LCH auction process. ➤ If electing to opt out of compensating swaps (and into the LCH auction process), arrange for relevant clearing broker(s) to inform LCH by 4th September 2020 via LCH Portal. ➤ <u>Clients should discuss their options with their clearing member and take external legal, financial or other professional advice, as appropriate.</u>

N.B. Whilst clients should strongly consider swap compensation, LCH recognizes that there is a diverse set of users with different needs. However, it is noted that the compensating swaps are designed to:

- (i) hedge against any price movements during or after the compensation process; and
- (ii) avoid exposure to any costs associated with the auction itself.

By electing to take cash-only compensation, a client account would not be able to benefit from these

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