香港場外結算有限公司
(香港交易及結算所有限公司附屬公司)

OTC CLEARING HONG KONG LIMITED
(A subsidiary of Hong Kong Exchanges and Clearing Limited)

通告 CIRCULAR

Subject: Transition Plan from EONIA[1] to €STR[2] discounting & Price Alignment for Cleared EUR Interest Rate Swaps

Enquiry: OTC Clear Operations Team (OTC_Operations@hkex.com.hk)

Further to the circular (Ref No: OTCO/010/2020) published on Tuesday 21 April 2020, OTC Clearing Hong Kong Limited (**OTC Clear**) will proceed with the switch of EUR discounting and Price Alignment Interest (**PAI**) calculation reference rate from EONIA to €STR as outlined below.

1. Timing

The transition of the EUR discounting switch and PAI calculation from EONIA to €STR will take place from Friday 24 July 2020 (the transition day, "T"). Please refer to Section 5 for a detailed timeline of the transition.

2. Scope

OTC Clear will switch the discounting curve and PAI calculation reference rate from EONIA to €STR for both new and legacy contracts in one single step. €STR will be used for PAI calculation and as the discount rate for new and legacy contracts of in-scope products from Monday 27 July 2020 (T+1) onwards. The in-scope products are EUR Interest Rate Swaps (including Fixed/Float and basis swaps) as shown below:

Instrument		Currency	Floating Rate Option	Maximum Tenor
Original Standard Rates Derivatives Transactions	Single Currency Interest Rate Swaps	EUR	EUR-EURIBOR-Reuters	11 Years
			EUR-LIBOR-BBA	11 Years
	Single Currency Basis Swaps	EUR	EUR-EURIBOR-Reuters	11 Years
			EUR-LIBOR-BBA	11 Years

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[1] Euro Overnight Index Average

[2] Euro Short-Term Rate

3. Cash Compensation Process

The discounting switch will result in a valuation change to the current portfolios. A cash compensation process has been designed to neutralize the value transfer attributed to the switch. The cash compensation process will be centralized and carried out by OTC Clear as calculation agent.

A) At the close of business on transition day T, OTC Clear would conduct a standard End-of-Day valuation cycle, using EONIA to calculate the net present value ($NPV_{T(EONIA)}$) of the relevant outstanding trade positions. The $NPV_{T(EONIA)}$ will continue to be treated as the official End-of-Day valuation and used in the End-of-Day process to calculate Variation Margin (**VM**) on T.

B) Upon completion of the standard valuation cycle, OTC Clear would then conduct a special valuation cycle in which the same trade positions will be valued with €STR discounting ($NPV_{T(€STR)}$). OTC Clear would calculate a one-off equal and opposite cash adjustment to neutralise the NPV changes ($NPV_{T(€STR)} - NPV_{T(EONIA)}$) as a result of the change in discount rate, i.e. $-(NPV_{T(€STR)} - NPV_{T(EONIA)})$. To illustrate the calculation of the cash adjustment, please refer to the following example:-

Business Date	NPV based on EONIA Discounting	NPV based on €STR Discounting	VM calculated on Business Date		One-off Cash Adjustment calculated on T	Settlement of VM / Cash Adjustment on respective Business Date
t	$NPV_{t(EONIA)}$	$NPV_{t(€STR)}$	$NPV_t - NPV_{t-1}$		$-(NPV_{t(€STR)} - NPV_{t(EONIA)})$	
T-1 (Thursday) 23 July 2020	100					
T (Friday) 24 July 2020	101	99	+1 (101-100)		+2 -(99-101)	
Weekend						
T+1 (Monday) 27 July 2020		97	-4 (97-101)			+1
T+2 (Tuesday) 28 July 2020		94	-3 (94-97)			-2 (-4+2)

Numbers shaded are the official End-of-Day NPV on the respective Business Date

C) In the End-of-Day process on T+1, OTC Clear would use €STR to calculate the net present value ($NPV_{T+1(€STR)}$) of the relevant outstanding trade positions. The $NPV_{T+1(€STR)}$

will be treated as the official End-of-Day valuation. The End-of-Day VM on T+1 would be calculated as ($NPV_{T+1(€STR)}$ − $NPV_{T(EONIA)}$) which effectively capture the valuation difference due to (a) discounting switch from EONIA to €STR and (b) market move under €STR from T to T+1.

D) The details of the one-off cash adjustment calculated in Paragraph B) will be shown in the "WEB Special Message Report" and the adjusted amount will be reflected as "ADDNL_PAYMENT" in the WEB Money Settle Report published in OASIS on T+1 after the End-of-Day process. The one-off cash adjustment and the T+1 End-of-Day VM calculated in Paragraph C) will be settled on Business Date T+2. By doing so, the cash adjustment will neutralise the NPV changes and compensate for the VM calculated due to different discount rates.

4. Switch of PAI calculation reference rate

PAI is used to settle the internal rate of return on the cumulative VM payments transferred in respect of each OTC Clear Clearing Day. The PAI will be calculated as follows:-

PAI_T = NPV_{T-1} X PAI Rate$_{T-1(EONIA)}$ X Accrual Factor under EONIA discounting

PAI_{T+1} = NPV_T X PAI Rate$_{T(€STR)}$ X Accrual Factor under €STR discounting

where,

NPV_t is the net present value determined on t based on the relevant discount rate (EONIA or €STR).

PAI Rate$_{t(ois)}$ means the annual percentage rate determined by OTC Clear by reference to the last relevant End-of-Day overnight index swap ("OIS") curves (EONIA or €STR) calculated on t.

Accrual Factor means the day count fraction to convert the PAI Rate from an annual rate to a daily rate, on a basis of a year with a number of days equal to:-

      i. 360 calendar days (which is adopted for EUR IRS); or

      ii. 365 calendar days.

5. Timeline of the discounting switch process

A summary of the process of the EUR discounting switch from EONIA to €STR over the transition period from Friday 24 July 2020 to Tuesday 28 July 2020 is listed in the table below.

The process will be tested during a dress rehearsal prior to the official discounting switch. The date for the dress rehearsal will be published in due course.

Date / Time	Step #	Process
T (Friday) 24 July 2020 (EOD)	1	Run the standard end-of-day valuation cycle, using EONIA discounting and PAI to calculate the $NPV_{T(EONIA)}$ and $PAI_{T(EONIA)}$ of all in-scope outstanding trade positions.
	2	Run the special end-of-day valuation cycle, using €STR discounting to calculate the $NPV_{T(€STR)}$ for the same trade positions as in step 1.
	3	Calculate the one-off equal and opposite cash adjustment to neutralise the NPV changes ($NPV_{T(€STR)} - NPV_{T(EONIA)}$) as a result of the change in the discount rate, i.e. $-(NPV_{T(€STR)} - NPV_{T(EONIA)})$.
	4	Generate the WEB Benchmark Valuation NPV comparison report (report id RMRP33[3]) at trade level and share with Clearing Members (**CM**).
Weekend 25 July 2020	5	Switch the official discounting and PAI calculation reference rate from EONIA to €STR.
T+1 (Monday) 27 July 2020 (SOD)	6	Start using €STR discounting for intraday margin and valuation; the cash compensation will be accounted for each affected CM during the clearing hours on Monday.
T+1 (Monday) 27 July 2020	7	Book the one-off cash adjustment of $-(NPV_{T(€STR)} - NPV_{T(EONIA)})$ calculated in step 3 as "additional payment" to each CM's account.
T+1 (Monday) 27 July 2020 (EOD)	8	Run the standard end-of-day valuation cycle, using €STR discounting and PAI, which is now official, to calculate the $NPV_{T+1(€STR)}$ and $PAI_{T+1(€STR)}$.
	9	Calculate the End-of-Day VM on T+1 as ($NPV_{T+1(€STR)} - NPV_{T(EONIA)}$).
	10	Generate the WEB Money Settle report (report id STRP01[4]) which will include: a) The netted "additional payment" for the cash adjustment booked in step 7 above. b) $PAI_{T+1(€STR)}$ calculated in step 8 above. c) VM on T+1 = ($NPV_{T+1(€STR)} - NPV_{T(EONIA)}$) calculated in step 9 above.

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[3] Please refer to Appendix 1 for a sample WEB Benchmark Valuation NPV comparison report
[4] Please refer to Appendix 2 for a sample WEB Money Settle report

		d) Other coupon payment as appropriate.
	11	Generate the WEB Special Message report (report id ADHR01[5]) which would include the details of the one-off cash adjustment.
T+2 (Tuesday) 28 July 2020 11:00am	12	Deadline to settle items a) tod) listed in step 10 if it is net payable by the CM.
T+2 (Tuesday) 28 July 2020 2:30pm	13	Deadline to settle items a) to d) listed in step 10 if it is net receivable by the CM.

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[5] Please refer to Appendix 3 for a sample WEB Special Message report

Appendix 1 – Sample WEB Benchmark Valuation NPV comparison report

Member/Client Account	Trade Id	Product Description	Product Type	TradeStatus	Book	Trade Currency	Settlement Ccy	NPV*	Simulated NPV**	NPV Diff
MEMBER1	875752	Swap/20/02/2023/P:EUR/EUR IBOR/6M /R:EUR 2.00000	Swap	CLEARED	MEMBER1 _House	EUR	EUR	187,391,100.08	187,517,100.08	126,000.00
MEMBER1	875753	Swap/20/02/2022/P:EUR/EUR IBOR/6M /R:EUR 2.00000	Swap	CLEARED	MEMBER1 _House	EUR	EUR	-1,991,048.77	-1,997,048.77	-6,000.00

*The column NPV shows the $NPV_{T(EONIA)}$
**The column Simulated NPV shows the $NPV_{T(\text{€}STR)}$

Appendix 2 – Sample WEB Money Settle report

Member ID	Origin	CCP Trade ID	Payment Type	Payment sub-type	CCP Pay/Rec	Value Date	Expected Settle Date	Ccy Pair	Settle Currency	Transfer Amount
MEMBER1	House	111111	INTEREST	SimpleTransfer	PAYMENT	23/6/2020	23/6/2020		CNH	-1,000.00
MEMBER1	House	222222	VARIATION_MARGIN	SimpleTransfer	RECEIPT	23/6/2020	23/6/2020		CNH	9,000,000.00
MEMBER1	House	333333	ADDNL_PAYMENT	SimpleTransfer	RECEIPT	23/6/2020	23/6/2020		EUR	120,000.00*
MEMBER1	House	444444	CASHFLOW	SimpleTransfer	RECEIPT	23/6/2020	23/6/2020		USD	37,000.00
MEMBER1	House	555555	INTEREST	SimpleTransfer	PAYMENT	23/6/2020	23/6/2020		USD	-4,000.00
MEMBER1	House	666666	VARIATION_MARGIN	SimpleTransfer	RECEIPT	23/6/2020	23/6/2020		USD	12,000,000.00
MEMBER1	House	777777	PRINCIPAL	SimpleTransfer	RECEIPT	23/6/2020	23/6/2020	USD/CNH	CNH	70,000,000.00
MEMBER1	House	888888	PRINCIPAL	SimpleTransfer	PAYMENT	23/6/2020	23/6/2020	USD/CNH	USD	-10,000,000.00

*The amount is netted by CM, by book and by currency in this report

Appendix 3 – Sample WEB Special Message report

Clearing Member	Announcement
MEMEBER1	As part of the switch of the discounting curve and Price Alignment Interest (PAI) calculation from referencing EONIA to ESTR for both new and legacy contracts, a cash compensation process is implemented to neutralize the NPV changes from EONIA to ESTR. The adjusted amount will be reflected as ADDNL_PAYMENT in the WEB Money Settle Report published in OASIS today [27 July 2020] after the EOD process for settlement tomorrow [28 July 2020]. Clearing Members should refer to the report to complete settlement by the payment deadline.