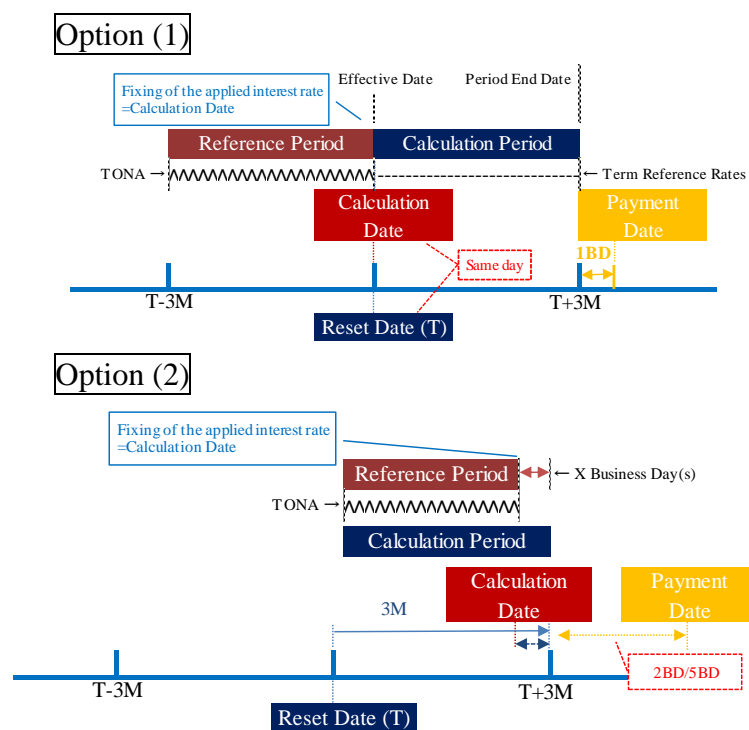


(Tentative translation)

[I] Reports from the Sub-Group for the Development of Term Reference Rates

1. Proposed requirements for option (1) O/N RFR Compounding (Fixing in Advance) and option (2) O/N RFR Compounding (Fixing in Arrears) on the basis that they are publically accessible



“Calculation Date” = “Reset Date”

Calculate by compounding RFR without adding spreads

Act/365

2-business day and 5-business day interval between the
“Calculation Date” and the “Payment Date”

Calculate by compounding RFR without adding spreads

Act/365

Set the “Calculation Period” based on the Reset Date and tenor
(prioritize standardization)

True-up adjustment of interest rates is not necessary (address in
provisions between parties, as deemed necessary)

- ✓ However, additional deliberation would be conducted if deemed necessary, taking account of the progress of deliberation in other currencies and on cross-currency basis swaps.

(Tentative translation)

2. Future work plan for option (3) Term Reference Rates (Swap) and option (4) Term Reference Rates (Futures)

(1) Option (3) Term Reference Rates (Swap)

- Considering actual OIS trading volume and distribution of quotes and responses to the internal survey about option (3), the future work plan for option (3) is described below¹ on the premise that existing data sources are used to the utmost.

Phase	Item	Possible timing of implementation	Data source	Methodology	Required measures
Phase 1	Calculation and publication of “prototype” rates ²	Promptly after release of deliverables based on the results of public consultation	<ul style="list-style-type: none"> • Executed transactions (cleared by the JSCC) ✓ Consider whether it is necessary to acquire data from entities other than the JSCC • Streamed indicative quotes on voice RFQ (bid-offer) 	<ul style="list-style-type: none"> • Weighted average of data at a specific point in time, in a specific time window, or during the day (composite methodology combining transactions and quotes)³ *Refer to the JSCC’s Settlement Rates to validate Term Reference Rates, as deemed necessary 	<ul style="list-style-type: none"> • Selection of data aggregator (potential candidate as administrator) • Provision of transaction data to the aggregator by the JSCC • Quote data digitization and data provision to the aggregator by voice brokers
Phase 2	Calculation and publication of “production”	By mid-2021 at the latest (while making best efforts to move	<ul style="list-style-type: none"> • Executed transactions (cleared by the JSCC) ✓ Consider whether it is necessary to acquire data from 	<ul style="list-style-type: none"> • Weighted average of data at a specific point in time, in a specific time window, or during the day (composite 	<ul style="list-style-type: none"> • Selection of administrator⁷ and development of operational structure • Revitalization of

(Tentative translation)

Phase	Item	Possible timing of implementation	Data source	Methodology	Required measures
	rates ⁴	forward the schedule) ⁵	<p>entities other than the JSCC</p> <ul style="list-style-type: none"> • Streamed indicative quotes on voice RFQ (bid-offer) ✓ Consider whether it is possible to acquire data from electronic trading platforms 	methodology combining transactions and quotes) ⁶	<p>transactions and expansion of the range of market participants</p> <ul style="list-style-type: none"> • Expansion of data sources • Validation of liquidity threshold considering international consistency across currencies

¹Timing may be flexible considering the progress of deliberation in yen and other currencies.

² It will be notified that prototype rates are calculated and published to allow market participants to prepare their operations and systems for the transition from LIBOR, and that they are not intended for use in actual transactions.

³ If the transaction volume is greater than or equal to the volume threshold, the transaction data are used to calculate Term Reference Rates. Otherwise quote data are used. Continuous deliberation on methodologies by the Sub-Group for the Development of Term Reference Rates will be necessary considering that the working group on euro risk-free rates advised against pursuing the composite methodology further in the “Second public consultation by the working group on euro risk-free rates” released in December 2018 and was of the opinion that the OIS quotes-based methodology is the most likely to be viable.

⁴ On the condition that they comply with related laws and regulations including those overseas, production rates are intended for use in actual transactions.

⁵ Considering (a) an increase in OIS liquidity is realistically dependent on the interest rate level and it is assumed that a full-scale increase in transaction volume will materialize from 2020 onward, (b) OIS liquidity may not increase without a futures market and resurgence of futures trade by the TFX is currently scheduled in mid-2020, (c) operational structure that complies with the requirements premised by the U.K., the U.S. and European regulatory authorities should be developed when production rates are calculated and published, and (d) the ARRC in the United States plans to create term reference rates by the end of 2021.

(Tentative translation)

⁶ Deliberation will continue on better calculation methodologies to respond actively to changing market dynamics and reduce manipulation risk, including using time-weighted average price, randomized timings, or some mixture of the two for capturing quotes as described in the consultation paper on term SONIA reference rates. Also, continuous deliberation on methodologies by the Sub-Group for the Development of Term Reference Rates will be necessary considering that the working group on euro risk-free rates advised against pursuing the composite methodology further in the “Second public consultation by the working group on euro risk-free rates” released in December 2018 and was of the opinion that the OIS quotes-based methodology is the most likely to be viable.

⁷ An organization or a legal person that controls the creation and operation of the Benchmark administration process, such as the calculation of the Benchmark, determining and applying calculation methodologies, and disseminating the Benchmark. An administrator is required to manage conflicts of interest, possess a regulatory framework, and a framework for internal oversight, etc.

(Items for Future Deliberation)

- ✓ Aim for a smooth transition from phase 1 to 2 so that variation does not appear in rate level.
- ✓ Before embarking on phase 1, it is necessary to thoroughly discuss issues on phase 2 and gain prospects for its introduction.
- ✓ Deliberate on the feasibility of daily point-in-time auctions, along with the methodologies in the above table.
- Issues on compliance including conflicts of interest have been pointed out by the sub-group members.

(Tentative translation)

(2) Option (4) Term Reference Rates (Futures)¹

Phase	Item	Possible timing of implementation	Data source	Methodology	Required measures
Phase 1	Calculation and publication of “prototype” rates	Dec. 2020	Executed transactions	<ul style="list-style-type: none"> • Weighted average of data at a specific point in time, in a specific time window, or during the day • Consider composite methodology combining transactions and firm quotes on CLOBs if transaction volume is not sufficient 	<ul style="list-style-type: none"> • Selection of administrator • Development of calculation model including treatment of convexity effect • Modification of requirements² for futures trade to calculate Term Reference Rates • Resurgence by Exchange³ • Linkage between the Exchange and the administrator if they are not the same
Phase 2	Calculation and publication of “production” rates	Mid-2021	Executed transactions	<ul style="list-style-type: none"> • Weighted average of data at a specific point in time, in a specific time window, or during the day • Firm quotes on CLOBs (weighted average rate at top of order book) if transactions are not executed 	<ul style="list-style-type: none"> • Revitalization of transactions • Validation of liquidity threshold considering international consistency across currencies

(Tentative translation)

¹ For the time being, deliberation on option (3) will be prioritized while that on option (4) may be conducted in the Sub-Group for the Development of Term Reference Rates if deemed necessary considering developments in deliberation in the TFX's WG.

² Points such as contract month and tenor.

³ Currently anticipated at mid-2020, but will be specifically discussed in the TFX's WG.

Before the publication of production rates in phase 2, it will be comprehensively determined whether either option (3) or (4) should be selected or whether the two should coexist (by treating one as a complementary methodology of the other) based on market conditions and the progress of deliberation in yen and other currencies.