This paper aims to summarize the main points of the past deliberation by the Committee and the sub-groups which will form the prime substance of the draft of the future public consultation conducted by the Committee on appropriate choice and usage of JPY interest rate benchmarks.

Please note that the substance of this paper will possibly change depending on further discussions in the Committee and future developments overseas.

[VI] Main Points of the Draft of the Public Consultation on Appropriate Choice and Usage of JPY Interest Rate Benchmarks

Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks

Apr. 2019

1. Fundamental Approach

- The Committee has discussed “Transition” and “Fallbacks” which envisage the permanent discontinuation of JPY LIBOR for financial products and transactions referencing JPY LIBOR.

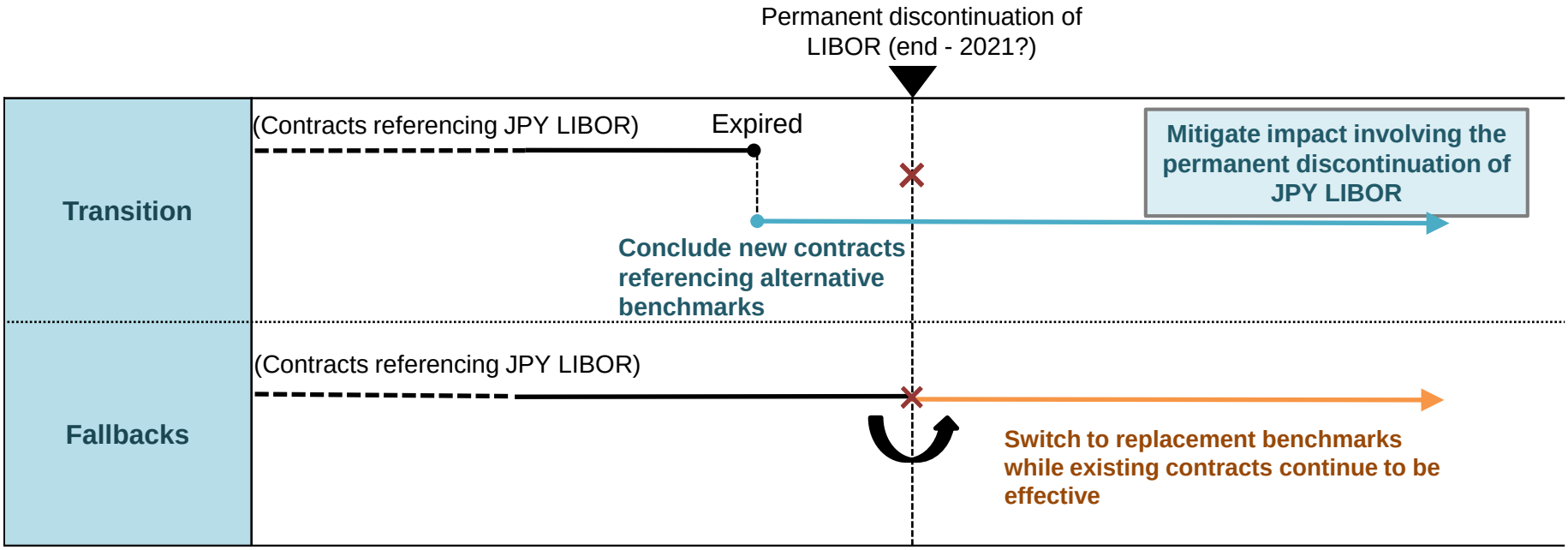
Transactions referencing JPY LIBOR

(i) Transition

Use alternative benchmarks (see II.), not LIBOR, for new contracts for financial products and transactions

(ii) Fallbacks

Agree on replacement benchmarks (see II.) to be used after the permanent discontinuation of LIBOR between contracting parties in advance, for existing contracts referencing LIBOR



2. Alternative Benchmark Options

- The Committee has deliberated on five options to be used as alternative benchmarks upon transition and fallback replacement benchmarks . More specifically, the options are Term Reference Rates based on the uncollateralized overnight call rate (“TONA”), which is a risk-free rate, and TIBOR, which is an existing benchmark. (See Ref.1 for details on the requirements for options (1), (2), and (3).)

Item	(1) O/N RFR Compounding (Fixing in Advance)	(2) O/N RFR Compounding (Fixing in Arrears)	(3) Term Reference Rates (Swap)	(4) Term Reference Rates (Futures)	(5) TIBOR
Underlying rate	Uncollateralized overnight call rate (TONA)		JPY OIS	Overnight call rate futures	TIBOR
Reference Period	Image A	Image B	Image C		

Images (e.g. 3 month)

Image A

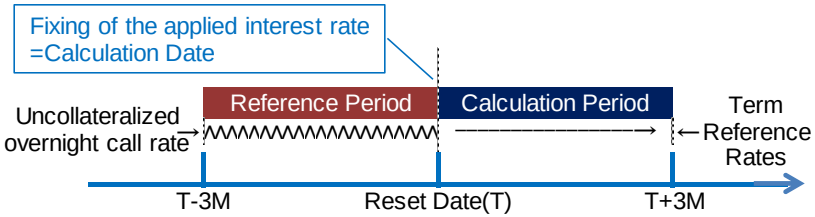


Image B

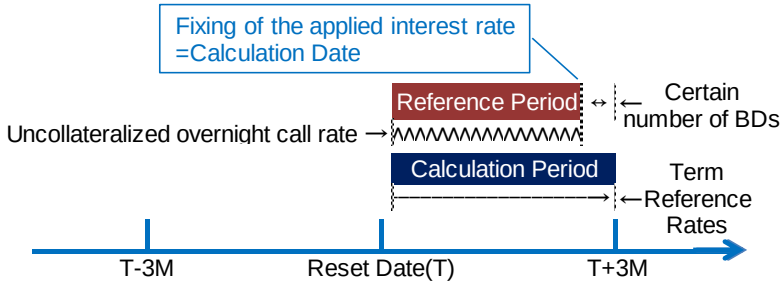
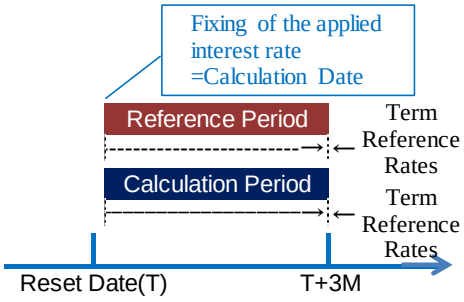


Image C

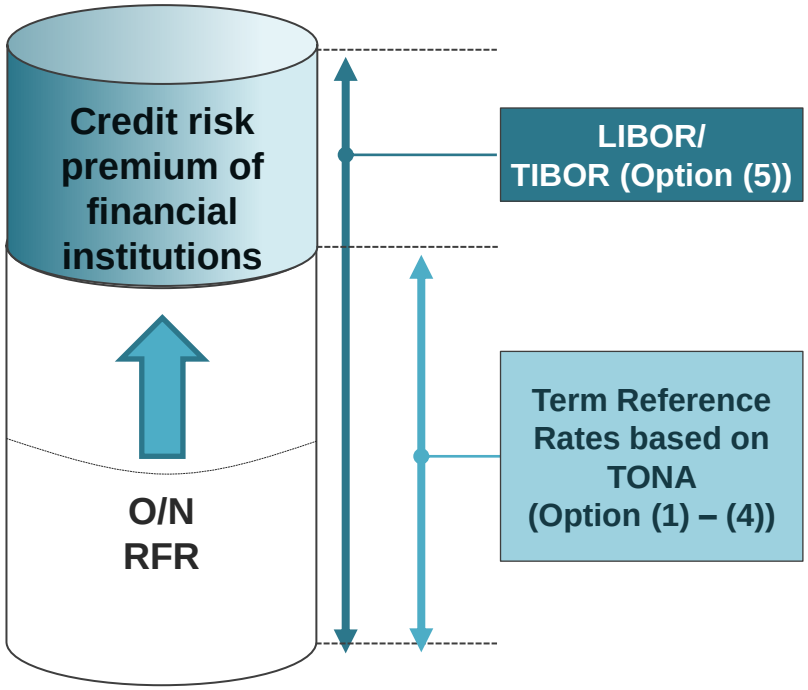


* Option (3) is expected to be developed in around mid-2021. The Tokyo Financial Exchange is considering to relaunch trading of Over-Night Call Rate Futures in around 2020.

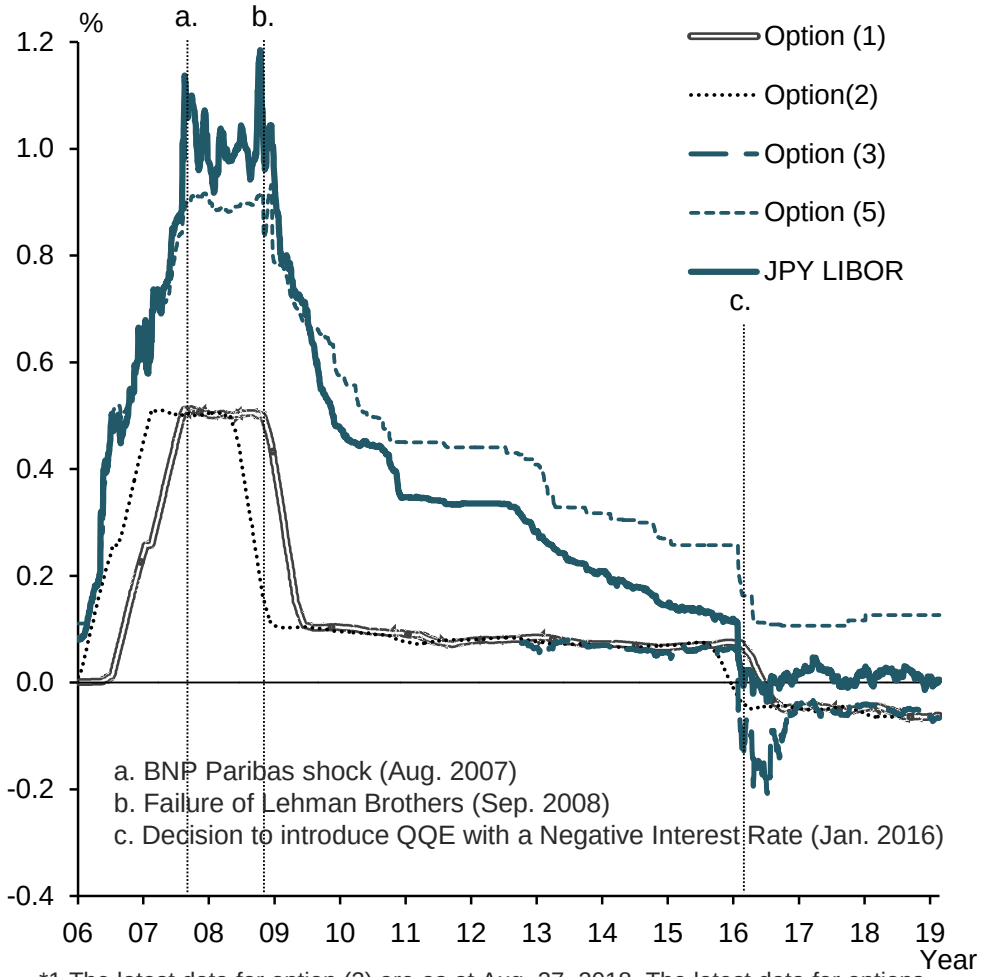
3. Features of Alternative Benchmarks

- The features of alternative benchmarks, such as the components (e.g., credit risk premium of financial institutions) of each alternative benchmark option and their historical fluctuations including in stress periods, should be well considered when selecting an alternative benchmark.

Components of term reference rates



6-month rates for each option



*1 The latest data for option (2) are as at Aug. 27, 2018. The latest data for options other than option (2) are as at Feb. 26, 2019.
*2 Because option (3) has yet to be developed, the data are substituted with JPY OIS data published by the JSCC on every business day .

Source: Refinitiv

4. Evaluation of Alternative Benchmark Options

In light of the members' views sought in the Sub-Group on Loans and Sub-Group on Bonds, the evaluation of alternative benchmark options are, at this point, summarized as follows.

- Before the development of Term Reference Rates, Options (2) and (5), and Option (2) would be suitable for general use in loans and bonds, respectively.
- After the development of Term Reference Rates, Options (3) or (4) and Option (5), and Option (2) and Options (3) or (4) would be suitable for general use in loans and bonds, respectively.

(Before the development of Option (3)/(4))

Options / Products	(1) O/N RFR Compounding (Fixing in Advance)	(2) O/N RFR Compounding (Fixing in Arrears)		(3) or (4) Term Reference Rates	(5) TIBOR
Loans	Tentative	Tentative	Permanent	Market-wide efforts to be made toward the development	
Bonds	Tentative	Permanent	Tentative		
Derivatives				?	?

(After the development of Option (3)/(4))

Options / Products	(1) O/N RFR Compounding (Fixing in Advance)	(2) O/N RFR Compounding (Fixing in Arrears)	(3) or (4) Term Reference Rates	(5) TIBOR
Loans				
Bonds				
Derivatives			?	?

: Options which would be suitable for general use

: Options which are expected to be used to a certain extent

: Options which would not be suitable for general use

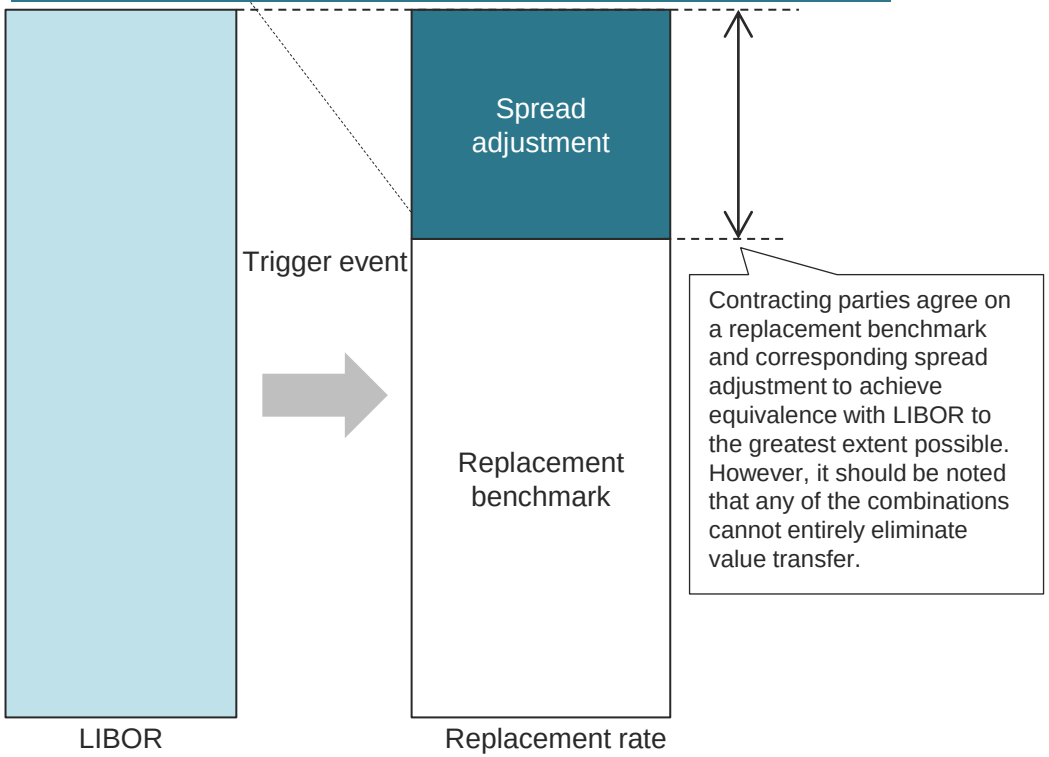
Options (3) (4) (5):
Like LIBOR, they are fixed in advance, and thus are compatible with existing operations and systems.

Option (2):
It is fixed in arrears, and thus is necessary to review existing operations and systems.
Meanwhile, it is consistent with ISDA's consultation on fallbacks for derivatives.

5. Considerations regarding Fallbacks

- There is usually a difference (spread) between LIBOR and the replacement benchmark, meaning that a gain or a loss (value transfer) could arise between contracting parties upon activation of a fallback, and a spread adjustment is required to minimize value transfer.
- In addition, given that the spread becomes constant after activation of fallbacks and that there are differences between the trends in LIBOR and the replacement rate options as shown in 3., the trends and levels of a replacement rate (i.e., replacement benchmark + spread) could differ from those envisaged in the contract referencing LIBOR.
- Since these possibilities cannot be eliminated, the trends and features of alternative benchmarks (as illustrated in 3.) should be carefully considered when agreeing on replacement rates. Consideration should also be given to the possibility of a difference in value transfer depending on the spread adjustment methodology.

Fallbacks for LIBOR (in the case of using O/N RFR Compounding as a replacement benchmark)



Options for the components of fallbacks

(1) Replacement rate (= replacement benchmark + spread)

Replacement benchmark
- ✓ Options (1) to (5) in 2.

Spread Adjustment (three options proposed by ISDA)
- ✓ Spread between the forward rates upon activation of fallbacks
- ✓ Mean/median of actual spot spreads prior to the activation of fallbacks
- ✓ Spread between the spot rates upon activation of fallbacks

(2) Triggering Conditions (Trigger Events)
- ✓ Permanent cessation of LIBOR (Permanent cessation trigger)
- ✓ Events prior to the cessation of LIBOR (Pre-cessation triggers)*
- ✓ Determination by contracting parties (Early opt-in triggers)

*Includes a public statement by the regulatory supervisor for the administrator of LIBOR stating that LIBOR is no longer representative.

6. Approaches to Fallbacks by Product

- In light of the members' views sought in the Sub-Group on Loans and Sub-Group on Bonds, the component of fallbacks by product are, at this point, summarized as follows.

Components of fallbacks	Loans	Bonds	Ref. ISDA Derivatives (Note 1)
(1) Replacement rate (Replacement benchmark and spread adjustment)	Replacement benchmark: Any of TIBOR, Term Reference Rates (Swaps/Futures), O/N RFR Compounding (Fixing in Arrears) (Note 2) Spread Adjustment: Mean/median of the actual spot spreads prior to the triggering of a fallback (publication not planned except at ISDA) A replacement rate could be determined when (a) fallback provisions are introduced (hardwired approach) or when (b) fallbacks are triggered (amendment approach)	Replacement benchmark: Align with the fallbacks for ISDA derivatives Spread Adjustment: Align with the fallbacks for ISDA derivatives	Replacement benchmark: O/N RFR Compounding (Fixing in Arrears) Spread Adjustment: Mean/median of the actual spot spreads prior to the triggering of a fallback (publication planned by ISDA)
(2) Triggering conditions (Trigger events)	• Introduction of permanent cessation triggers is recommended • Pre-cessation triggers and/or early opt-in triggers could also be introduced	• Align with the fallbacks for ISDA derivatives	• Only introduce permanent cessation triggers (Note 3)

When introducing fallback provisions for corporate bonds, a Bondholder's meeting must be held in principle (see Ref.2).

Note 1: Based on ISDA's consultation (and the options supported there) on the replacement rate for when fallbacks are triggered in derivatives contracts referencing benchmarks such as JPY LIBOR and which are governed by the ISDA master agreement. It should be noted that the consultation does not eliminate the possibility that contracting parties could separately agree on other fallback arrangements.
Note 2: A waterfall structure could be adopted when using a Term Reference Rate as a replacement rate.
Note 3: ISDA plans to hold an additional public consultation on pre-cessation triggers.

7. Accounting Issues

- In considering transition and fallbacks, accounting issues, including whether hedge accounting could be applied in cases 1 and 2 below, should be explored depending on the state of transactions at each company.
- The Accounting Standards Board of Japan (ASBJ) is considering how to deal with the accounting issues arising from interest rate benchmark reform.

Case 1 **When the replacement benchmark of a hedged item and that of its hedging instrument to be used after the activation of fallbacks differ**

e.g. Upon the discontinuation of JPY LIBOR, a hedged item and a hedging instrument simultaneously fall back to the benchmarks which are different from each other.

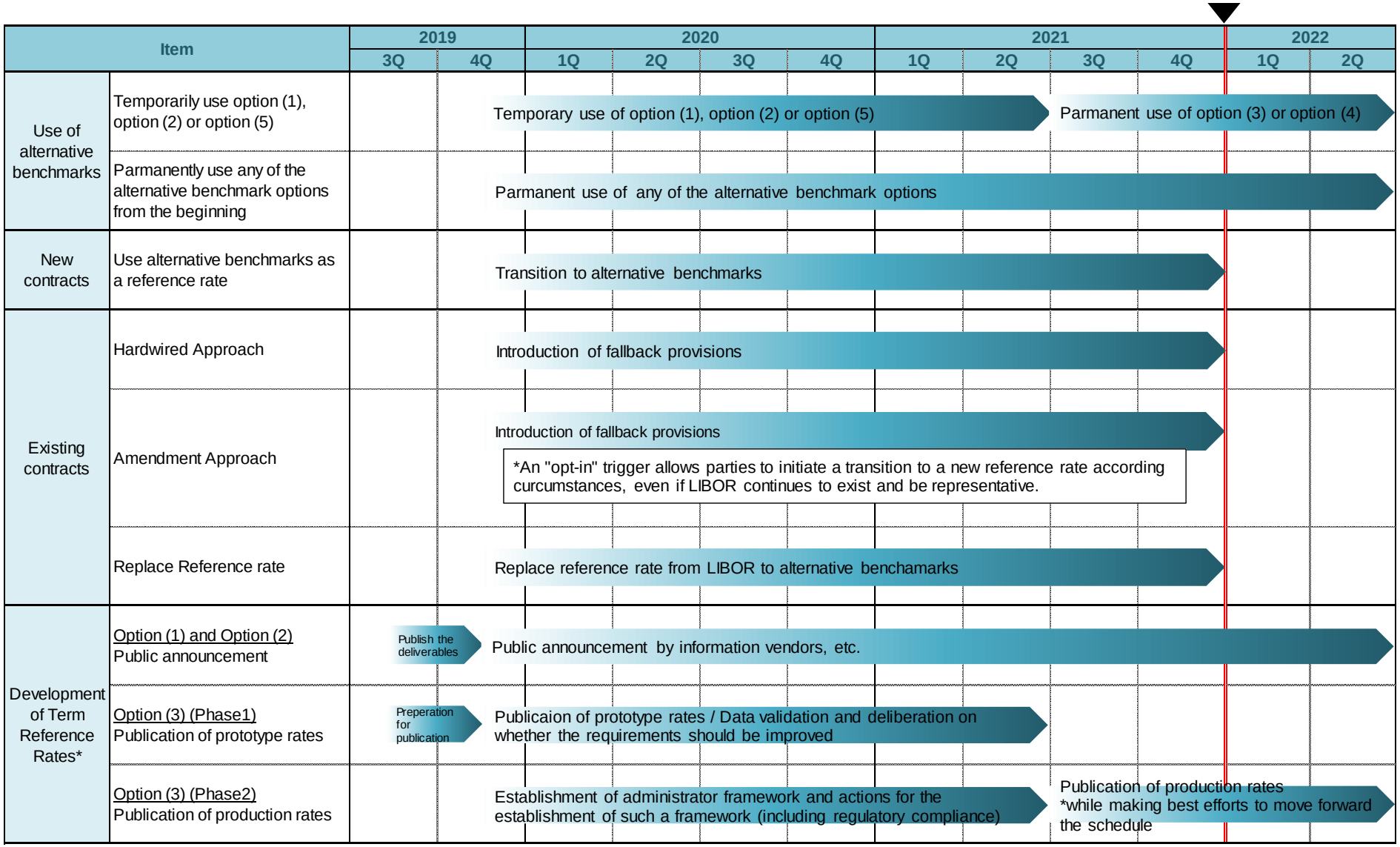
	Current State	Simultaneous Triggering
Hedged Item (e.g. Loans, Bonds)	JPY LIBOR	Term RFR + Spread Adjustment
Hedging instrument (e.g. Derivatives)	JPY LIBOR	O/N RFR Compounding (Fixing in Arrears) + Spread Adjustment

Case 2 **(With the replacement benchmarks being the same,) when the timing of activation of fallbacks for a hedged item and its hedging instrument differ because of a difference in trigger events between the two products**

e.g. While the publication of JPY LIBOR continues, a trigger event occurs for a hedged item alone, resulting in a fallback to its replacement benchmark. Subsequently, upon the discontinuation of JPY LIBOR, a hedging instrument falls back to its replacement benchmark (which is identical to the hedged item's replacement benchmark).

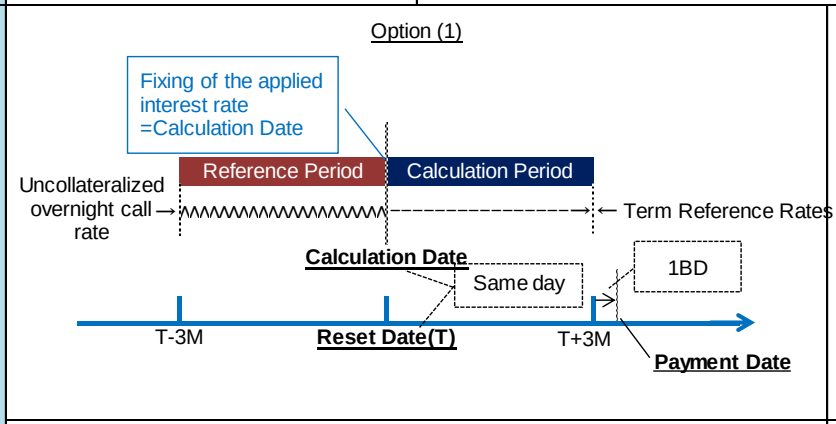
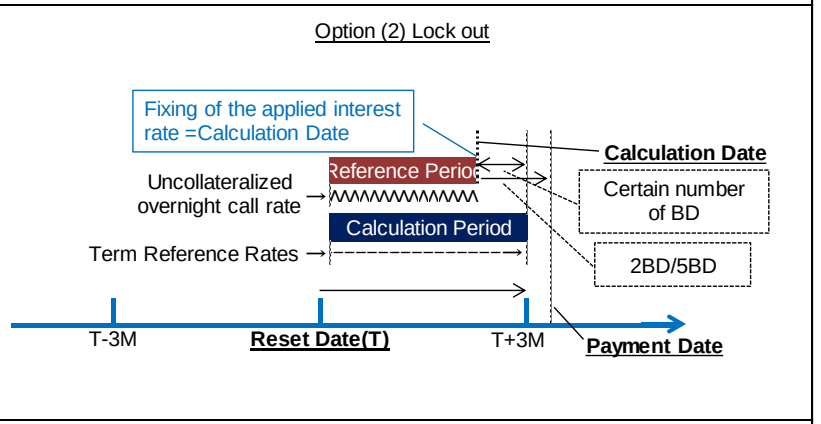
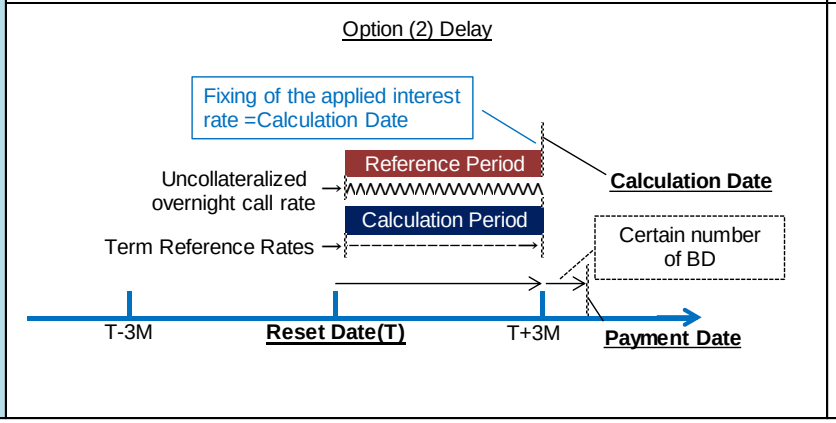
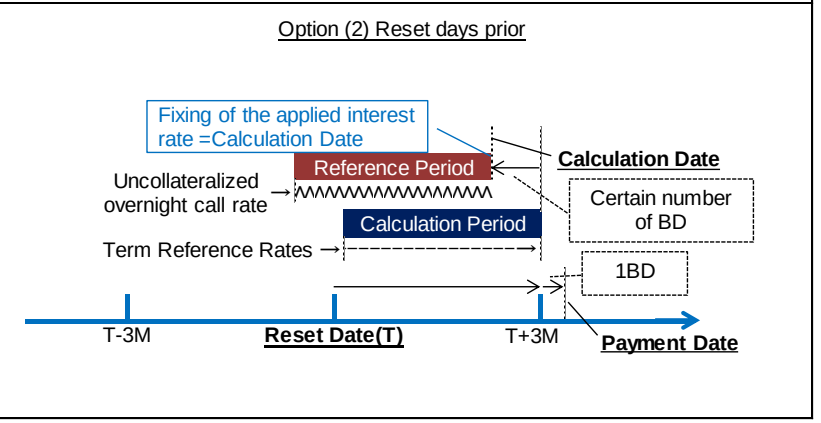
	Current State	Triggering of Hedged Item Alone	Triggering of Hedging Instrument
Hedged Item (e.g. Loans, Bonds)	JPY LIBOR	O/N RFR Compounding (Fixing in Arrears) + Spread Adjustment	O/N RFR Compounding (Fixing in Arrears) + Spread Adjustment
Hedging instrument (e.g. Derivatives)	JPY LIBOR	JPY LIBOR	O/N RFR Compounding (Fixing in Arrears) + Spread Adjustment

8. Transition Plan



*The publication timing may be brought forward or backward depending on the progress made in preparations by information vendors, the administrator, etc. It is necessary to continue monitoring the progress in deliberation about option (4).

[Ref.1] Requirements for Options (1) and (2)

Item	Option (1)	Option (2)		
		Lock out	Delay	Reset days prior
Interval between the Calculation Date and the Reset Date or the Payment Date	"Calculation Date" = "Reset Date"	2-business day and 5-business day interval between the "Calculation Date" and the "Payment Date"	(The number of business days is not relevant to the calculation of interest rates)	
Calculation methodology for interest rates and daycount fraction	Calculate by compounding RFR without adding spreads* Act/365			
Calculation Period	—	Set the Calculation Period based on the Reset Date and tenor		
Images				

* It is necessary to be aware of cases overseas where the simple average is used, in addition to coumpounding when the final requirements are decided.

[Ref.1] Requirements for Options (3)

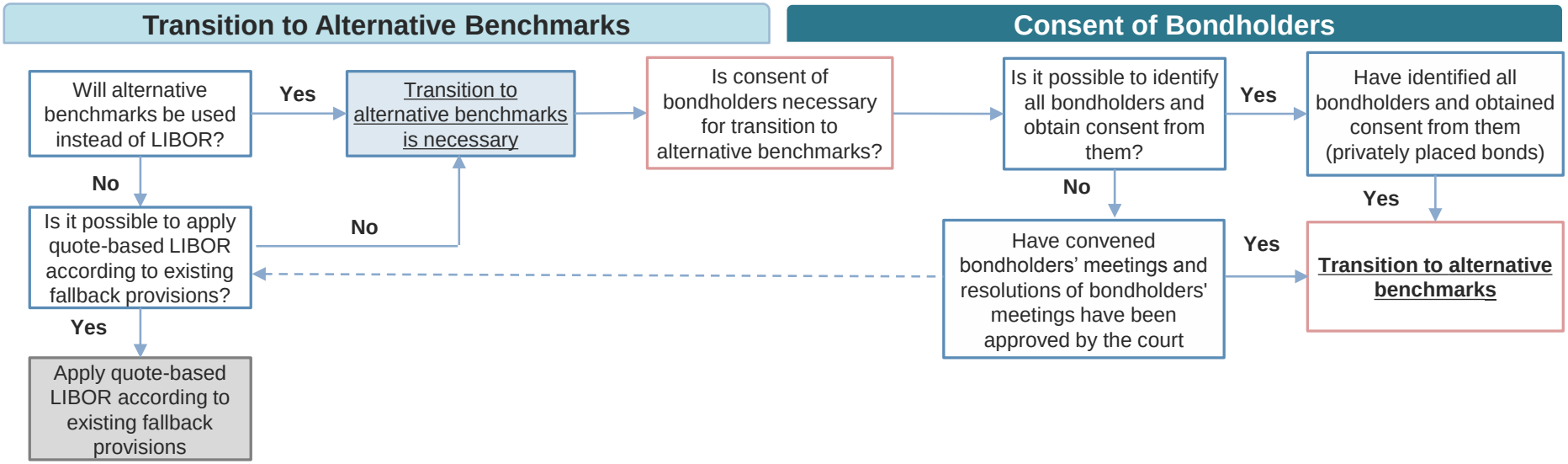
Item	Option (3)
1. Data	・Spot-starting outright OIS transactions (tenor:1M, 3M, 6M) ・Executed transactions on a Tokyo business day ・Centrally-cleared transactions (JSCC and LCH) ・Executed rates, notional amounts, executed date and time ・Best bids and offers and other data, date and time of submission, dealer name
2. Calculation date and time / publication time	Calculation date and time : 15:00 JST on a Tokyo business day Publication time : 17:00 JST on the same day
3. Data capturing time window	Phase 1 : All day (24 hours) / Phase 2 : A specific time window or all day (24 hours)
4. Data capturing method	Phase 1 : Capture all data (threshold will be zero) / Phase 2 : Capture all data (threshold will be zero for the time being)
5. Calculation methodology	・If the total notional amount of executed transactions is equal to or greater than the threshold, executed transaction data will only be used. Otherwise, only quote data will be used (waterfall method). ・In the waterfall method, it is assumed that data will be prioritized for use in the order below. (1) Executed transaction data (2) Tradeable quote data on CLOBs (3) Pair of tradeable quote data on voice brokers (Bid and offer) (4) Tradeable quote data on voice brokers (5) Pair of quote data on voice brokers (Bid and offer)

* The above requirements do not deny measures taken mainly by brokers to increase OIS liquidity (e.g., introduction of auctions).

[Ref.2] Process for Amending or Adopting Fallback Provisions for FRNs

- If the permanent discontinuation of JPY LIBOR is announced, bonds referencing JPY LIBOR must be transitioned from JPY LIBOR to a replacement rate.
- As for publicly offered bonds for which fallback provisions contemplating the permanent discontinuation of JPY LIBOR are not in place, a Bondholders' Meeting must be held in principle to adopt fallback provisions, considering their characteristics, including liquidity, anonymity, and holder diversity. (As for privately placed bonds, it might be possible to assume that this could be done after directly gaining consent from each bondholder.)
- From a practical perspective, it is necessary to secure a considerable time frame for Bondholders' Meetings. This is because it is necessary to (1) decide to convene a Bondholders' Meeting and make public notice of this decision and (2) obtain court approval of the resolution reached in the meeting.

[Publicly offered bonds] Flow chart for bonds for which fallback provisions contemplating the permanent discontinuation of JPY LIBOR are not in place



[Ref.3] Outline of the Public Consultation

Transition (use for new contracts)

Alternative benchmarks
Options when using publicly accessible interest rate benchmarks

(1) O/N RFR Compounding (Fixing in Advance)
(2) O/N RFR Compounding (Fixing in Arrears)
(3) Term Reference Rate (Swaps)
(4) Term Reference Rates (Futures)
(5) TIBOR

Fallbacks (fallbacks for existing contracts referencing LIBOR)

		Amendment Approach (assumed to be adopted in loans *1)	Hardwired Approach		Consistency with ISDA derivatives (in case the consistency is considered important)
			Other than the right		
			Choose one benchmark	Replacement benchmark waterfall	
Triggers		✓ Include a possible decision by lenders to transition as early opt-in triggers (based on agreement between parties)	Permanent cessation trigger Pre-cessation triggers Early opt-in triggers (stipulate trigger events in advance)		When derivatives are based on ISDA's standard documentation for derivatives, consistency between products could be achieved by adopting ISDA's fallbacks regarding triggers and replacement benchmarks.*2
Replacement rate	**Replacement benchmarks**	Alternative benchmarks (1) O/N RFR Compounding (Fixing in Advance) (2) O/N RFR Compounding (Fixing in Arrears) (3) Term Reference Rates (Swaps) (4) Term Reference Rates (Futures) (5) TIBOR	[Example] Replacement benchmark waterfall Case1: RFR>Fixing in advance>IBOR 1st: Term Reference Rates 2nd: O/N RFR Compounding (Fixing in Arrears) 3rd: O/N RFR Compounding (Fixing in Advance) 4th: TIBOR	Case2: Fixing in advance>RFR>IBOR 1st: Term Reference Rates 2nd: TIBOR 3rd: O/N RFR Compounding (Fixing in Advance) 4th: O/N RFR Compounding (Fixing in Arrears)	
	Spread	Spread agreed by lenders and borrowers	Options in the case of using alternative benchmarks: ✓ Spread which is consistent with fallbacks that ISDA intends to include in its standard documentation for derivatives ✓ It is undecided whether the spread calculated by other methods will be made publicly accessible or not		

*1 Amendment approach is not assumed to be used for bonds which have an unspecified large number of bond holders.
*2 Strong option at present: replacement benchmark⇒ O/N RFR Compounding (Fixing in Arrears), spread⇒mean/median of the actual spot spreads prior to the triggering of a fallback
It should be noted that consistency with the options above should be achieved provided if it is economically efficient and that the hedging relation will not necessarily continue to be effective.