This paper aims to summarize the main points of the “Public Consultation on the Appropriate Choice and Usage of Japanese Yen Interest Rate Benchmarks.” For details, please refer to the original document.

Main Points of the Public Consultation on the Appropriate Choice and Usage of Japanese Yen Interest Rate Benchmarks

Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks

Jul. 2019

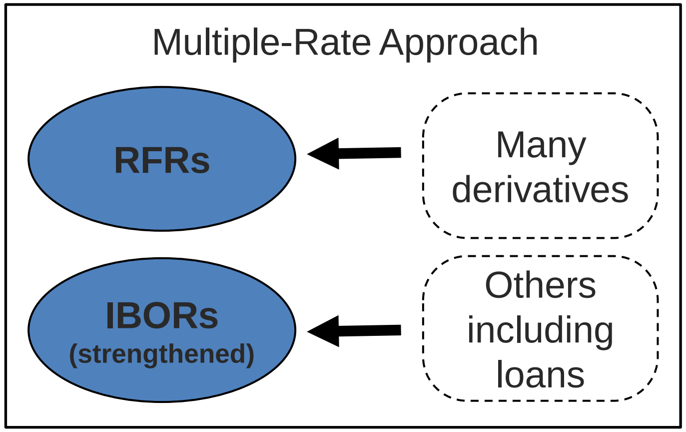
1. Initiatives on Interest Rate Benchmark Reform

- Since 2014, interest rate benchmark reform has taken place based on the recommendations of the Financial Stability Board (FSB) to promote the usage of interest rate benchmarks in ways suited to the characteristics of financial instruments and financial transactions (multiple-rate approach). Specifically, deliberations have been made on the following two areas.

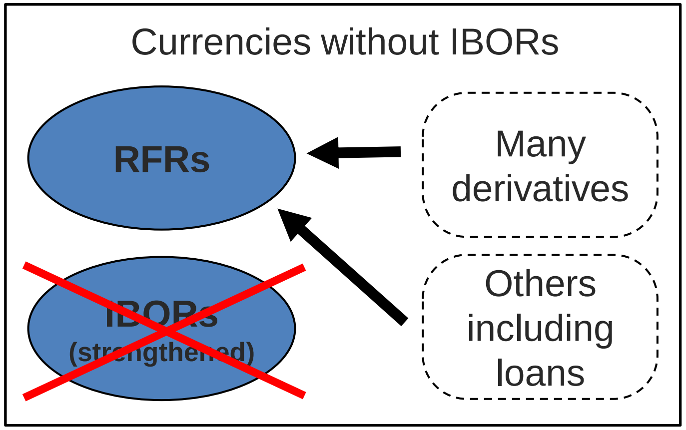
  (1) Improving the reliability and robustness of IBORs (LIBOR, TIBOR, and EURIBOR), which are existing major interest rate benchmarks that include bank credit risk

  (2) Developing and using nearly risk-free reference rates (RFRs) that hardly include bank credit risk

- However, since concerns about the sustainability of LIBOR beyond the end of 2021 have rapidly heightened, recent discussions have been centering on "preparations for the discontinuation of LIBOR." Also, the UK, the US and Switzerland have been deliberating in the direction of using RFRs as single benchmarks.



JPY, EUR, AUD, HKD, etc.



USD, GBP, and CHF

2. Volume of financial products and transactions referencing LIBOR, etc.

- The total notional outstanding volume of transactions referencing key IBORs across the globe are estimated to be at around $220 trillion as of 2014 (Note). In addition, various rules and practices are interdependent and are underpinned by LIBOR.

⇒ Each company will need to take initiatives to prepare for the permanent discontinuation of LIBOR.

Outstanding volume of transactions referencing key IBORs

(tril. U.S. dollars)

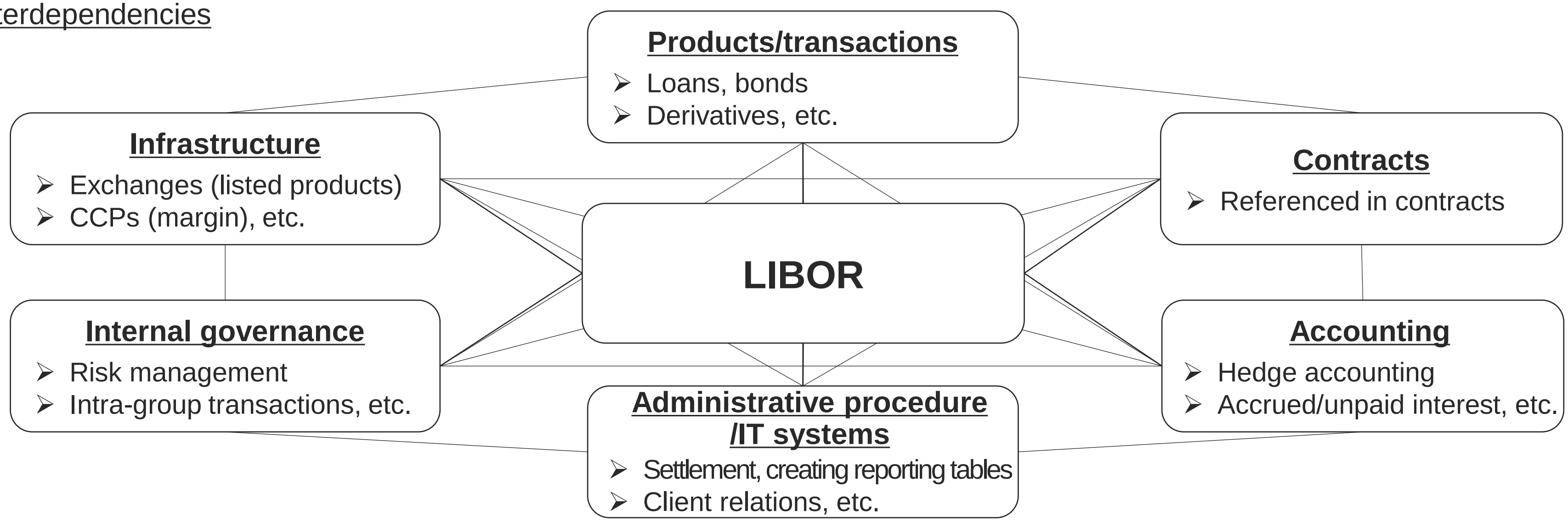
Currency	Volume
USD LIBOR	150
GBP LIBOR	30
CHF LIBOR	6.5
EUR LIBOR	2
JPY LIBOR	30
Ref. EURIBOR	150
Ref.TIBOR	5

Assets referencing JPY LIBOR

(tril. yen)

Asset class		Volume
Loans	Corporate loans(bilateral)	68
	Syndicated loans	75
Bonds	Floating rate notes	3
OTC derivatives	IR swaps	2,453
	Swaption	235
	Basis swaps	197
	X-currency swaps	108

Interdependencies



Note: "Market Participants Group on Reforming Interest Rate Benchmarks" (Mar. 2014)

3. Framework for deliberation by currency

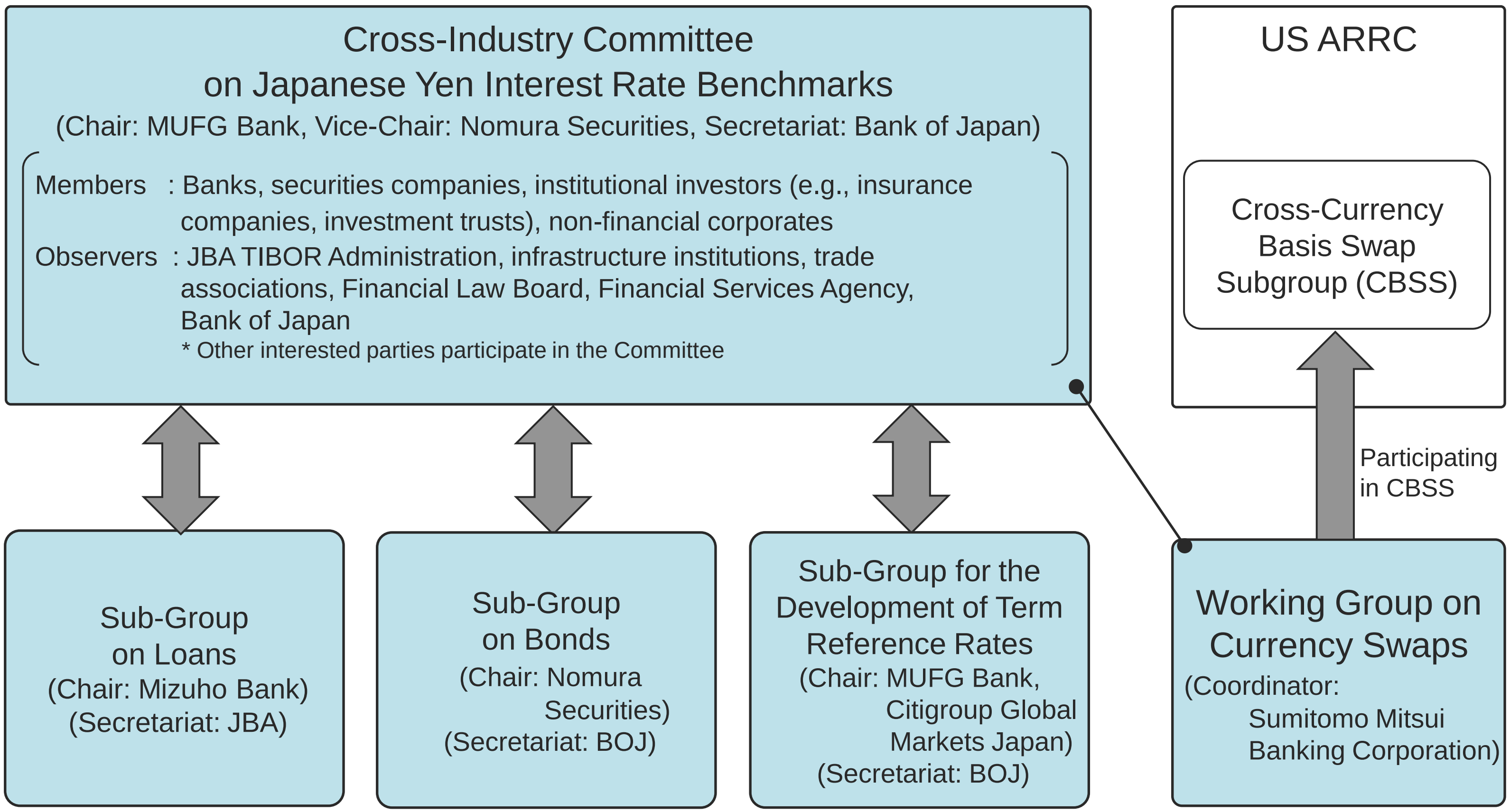
- RFRs have been identified for each currency (the uncollateralized overnight call rate for Japan).
- The deliberating bodies in each currency are aiming to develop term reference rates based on RFRs as alternative benchmarks for LIBOR (for details on deliberations by currency, see Ref.1).
- The deliberations in each currency are conducted with private financial institutions taking initiative. In addition to financial institutions, institutions such as institutional investors and non-financial corporates take part in the deliberating bodies.

	USD <FRB · FRBNY>	**GBP <BOE · FCA>**	**CHF <SNB>**	**EUR <ECB>**	**JPY <Bank of Japan>**
Identified RFRs	Overnight Treasury GC repo rate (SOFR)	Uncollateralized overnight rate (SONIA)	Overnight GC repo rate (SARON)	Uncollateralized overnight rate (€STR)	Uncollateralized overnight call rate (TONA)
Alternative Benchmarks for LIBOR	Term reference rates based on SOFR	Term reference rates based on SONIA	SARON (Compounding)	Term reference rates based on €STR and EURIBOR	Term reference rates based on TONA and TIBOR

Note: < > shows the Secretariats of each deliberating body.

4. Framework for deliberation in Japan

- The “Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks” started deliberations in August 2018 since when it was established. Participants include not only financial institutions but also interest rate benchmark users, such as institutional investors and non-financial corporates (for details on the members and observers of the Committee, see Ref.2).



Sub-Groups deliberate on issues drawing on the views of practitioners or experts by product or theme under the Committee.

5. 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.

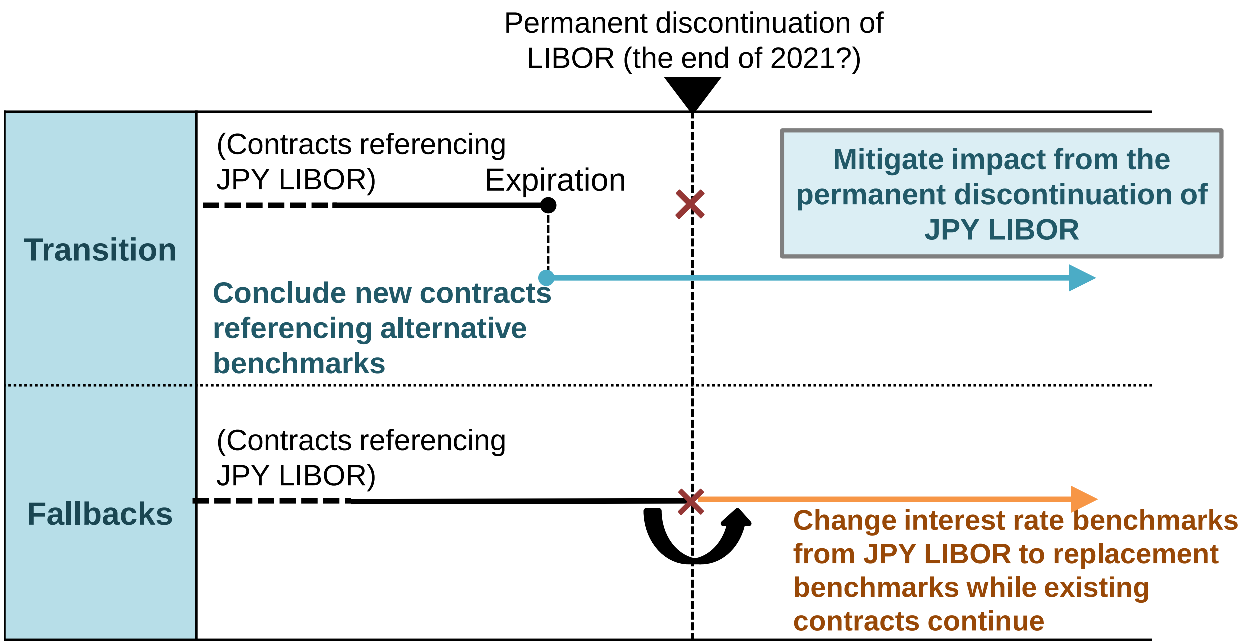
Transactions referencing JPY LIBOR

(i) Transition

Use alternative benchmarks (see 6.), not LIBOR, for new contracts for financial products and transactions

(ii) Fallbacks

Agree on replacement benchmarks (see 6.) to be used after the permanent discontinuation of LIBOR between contracting parties in advance, for existing contracts referencing LIBOR



6. 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.3 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

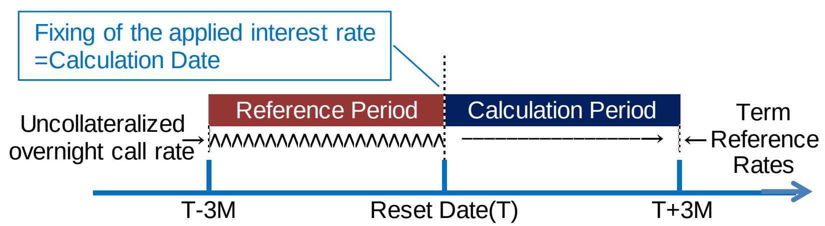


Image B

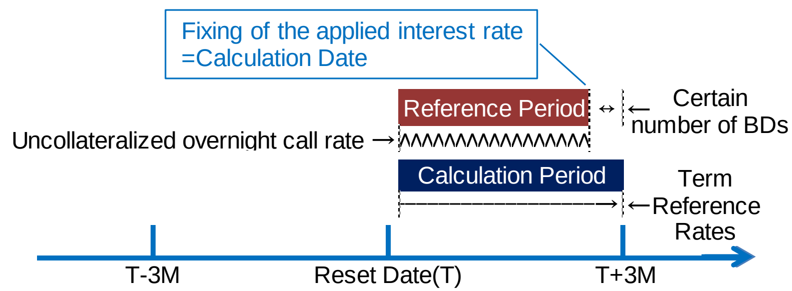
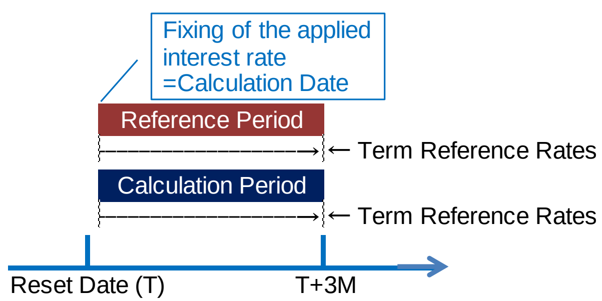


Image C

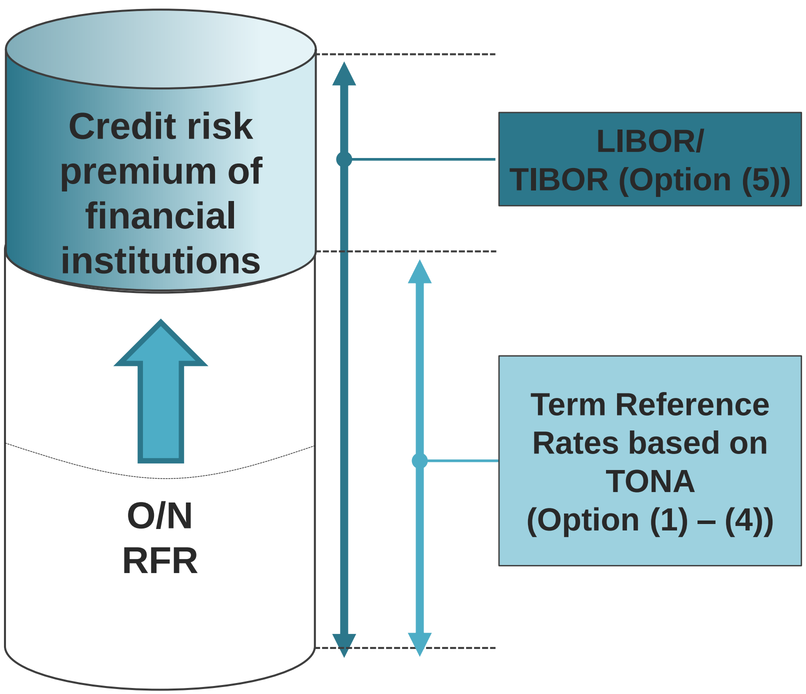


* Option (3) is expected to be developed by around mid-2021. As for Option (4), the Tokyo Financial Exchange is considering to resume trading of Over-Night Call Rate Futures in around 2020.

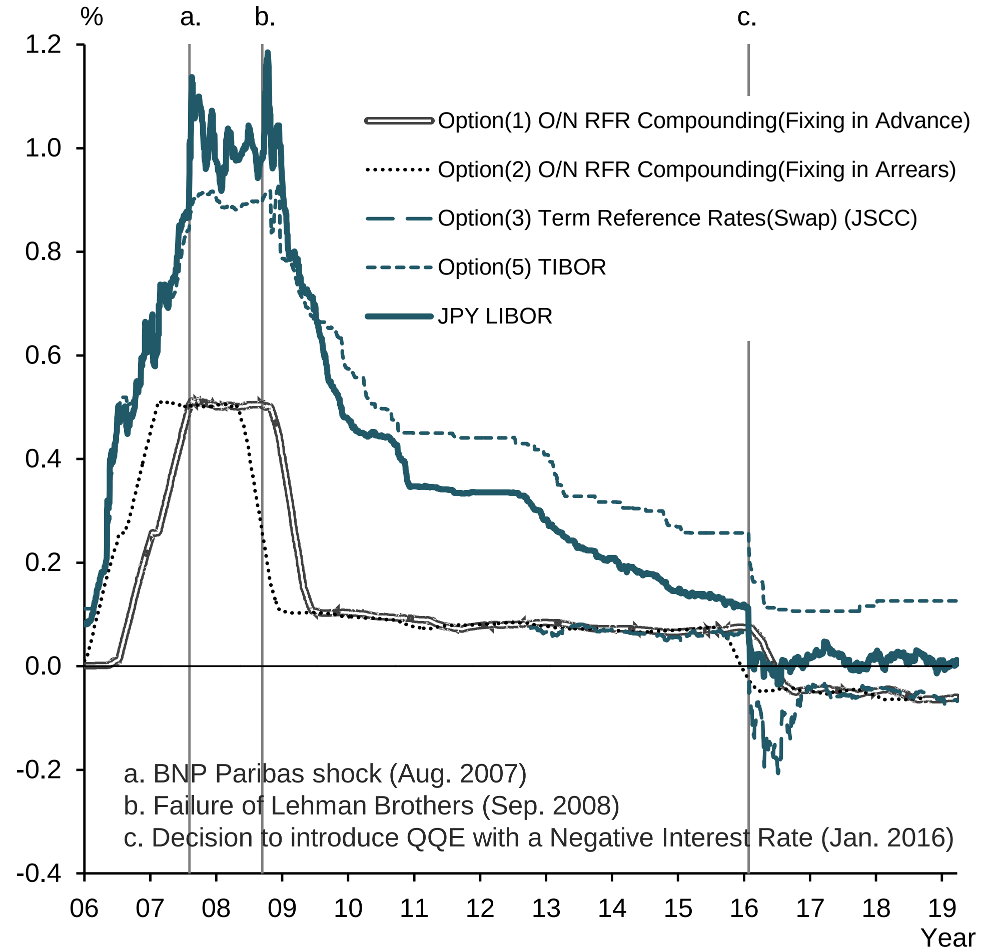
7. Features of Alternative Benchmarks

- The features of alternative benchmarks, such as the components (e.g., credit risk premium of financial institutions) of alternative benchmark Options (1) to (5) shown in 6., 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 Oct. 1, 2018. The latest data for options other than Option (2) are as at Mar. 29, 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. The data are only available since Oct. 2012.

Source: Refinitiv

8. Evaluation of Alternative Benchmark Options

- The Committee's present evaluation of alternative benchmark options is as follows.
  - 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.
- However, since Options (3) and (4) have yet to be developed, temporary use of Option (1), Option (2) or Option (5) must be explored until their development.

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			Note	Note

: 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

Note: While Option (2) is assumed to be used generally for derivatives, derivative transactions may be executed accordingly to loans and bonds when loans and bonds reference Options (3) or (4) and Option (5).

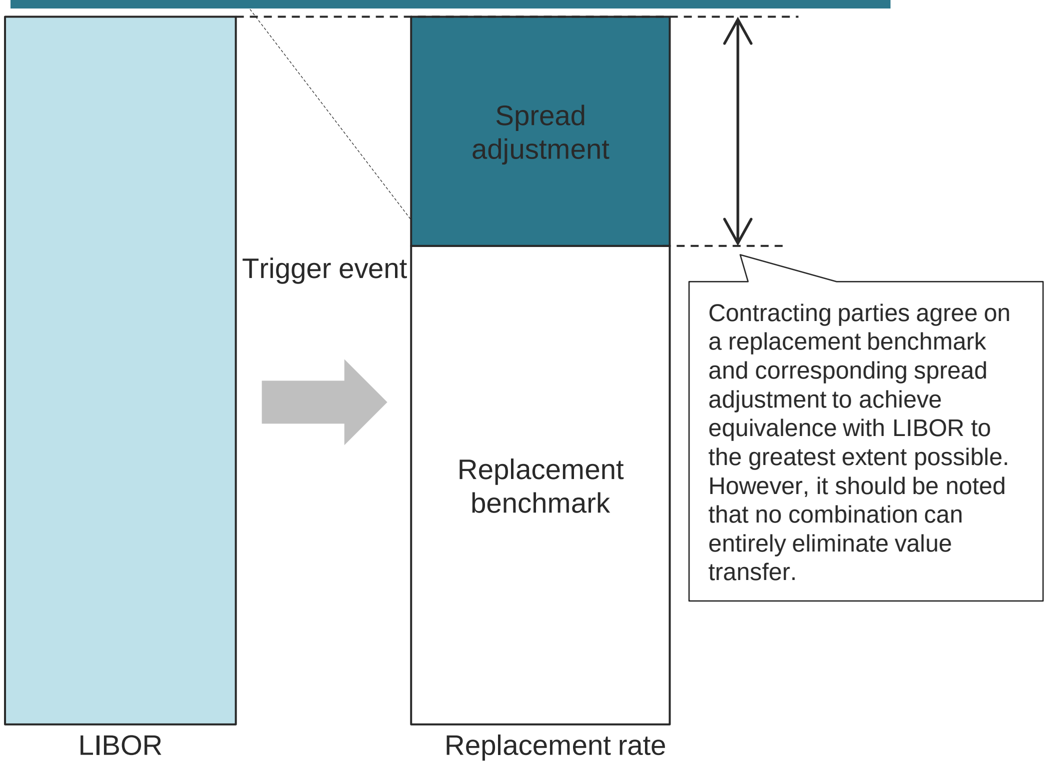
<u>Options (3) (4) (5)</u>:
Like LIBOR, they are fixed in advance, and thus are compatible with existing operations and systems.

<u>Option (2):</u>
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.

9. 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 7., the trends and levels of a replacement rate (i.e., replacement benchmark + spread) could differ from those envisaged originally in the contract referencing LIBOR.
- Since these possibilities cannot be eliminated, the trends and features of alternative benchmarks (as illustrated in 7.) 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 as shown in 6.

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.

10. Approaches to Fallbacks by Product

- The Committee currently sets out the components of fallbacks by product as follows.

Components of fallbacks	Loans	Bonds	Ref. ISDA Derivatives (Note 1)
(1) Replacement rate (Replacement benchmark and spread adjustment)	Replacement benchmark: Assumed to be any of: TIBOR, Term Reference Rates (Swaps/Futures) (Note 2), and O/N RFR Compounding (Fixing in Arrears) 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 • However, Term Reference Rates (Swaps/Futures) (Note 2) and TIBOR are also assumed as benchmarks depending on the substance of transactions. Spread Adjustment: Mean/median of the actual spot spreads prior to the triggering of a fallback (publication not planned except at ISDA)	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)	• Align with the fallbacks for ISDA derivatives • Early opt-in triggers could also be introduced	• Align with the fallbacks for ISDA derivatives	• Introduce permanent cessation triggers ISDA is currently holding a public consultation on pre-cessation triggers

When introducing fallback provisions for corporate bonds, a Bondholder's meeting must be held in principle (see Ref.4).

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.

11. 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 their 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

12. Transition Plan

Item		2019 3Q	2019 4Q	2020 1Q	2020 2Q	2020 3Q	2020 4Q	2021 1Q	2021 2Q	2021 3Q	2021 4Q	2022 1Q	2022 2Q
Development of Term Reference Rates*	<u>Option (1) and Option (2)</u> Publication		Publish the deliverables	Publication by information vendors, etc.									
	<u>Option (3) (Phase1)</u> Publication of prototype rates		Preperation for publication	Publication of prototype rates / Data validation and deliberation whether the requirements should be improved									
	<u>Option (3) (Phase2)</u> Publication of production rates			Establishment of administrator framework and actions for the establishment of such a framework (including regulatory compliance)						Publication of production rates *while making best efforts to move forward the schedule			
Use of alternative benchmarks	Temporarily use Option (1), Option (2) or Option (5)			Temporary use of Option (1), Option (2) or Option (5)						Permanent use of Option (3) or Option (4)			
	Permanently use Option (1), Option (2) or Option (5) from the beginning			Permanent use of Option (1), Option (2) or Option (5) from the beginning									
New contracts	Use alternative benchmarks as a reference rate			Transition to alternative benchmarks									
Existing contracts	Hardwired Approach			Introduction of fallback provisions									
	Amendment Approach			Introduction of fallback provisions *An "opt-in" trigger allows parties to initiate a transition to a new reference rate according to the situation, even if LIBOR continues to exist and be representative.									
	Reference rate replacement			Reference rate replacement from LIBOR to alternative benchmarks									

*The publication timing may be moved around depending on the progress made in preparation by information vendors, and the administrator, etc. It is necessary to continue monitoring the progress made in deliberation about Option (4).

13. Examples of Future Initiatives by Each Company

- In the midst of concerns about a possibility of the permanent discontinuation of LIBOR at as early as the end of 2021, each financial institution and non-financial corporate needs to take initiatives while bearing in mind the "end-2021" time limit.

(1) Management-level and firm-wide initiatives (example)

Development of organizational and governance structure

- Establishment of sections and responsible persons dedicated to addressing the permanent discontinuation of JPY LIBOR
- Establishment of internal governance structure including development of policymaking process
- Securing internal resources (staff, budget, etc.) to realize the initiatives

Identification of instruments, transactions, and operations referencing JPY LIBOR

- Comprehensive identification of financial instruments and transactions referencing JPY LIBOR from among the company's entire inventory
- Identification of original contracts and provisions for financial instruments and transactions referencing JPY LIBOR
- Identification of operations referencing JPY LIBOR in the areas other than financial transactions (e.g., financial accounting and management accounting)

Deliberation of firm-wide measures

- Development of policy (with an eye on end-2021)
- Choosing alternative benchmarks for JPY LIBOR
- Assigning all tasks to the administrative level for each department

(2) Tasks in each department (example)

Department	Tasks
Client services (financial institutions, etc.) **Financing and accounting (non-financial corporates)**	• (The client services departments of financial institutions, etc.) Preparation of FAQs for explanation to clients, training, etc. • (For bilateral contracts) Consultation of regimes between borrowers and lenders ⇒ Deliberation on the transition to alternative benchmarks at an early stage by contract amendments before fallback • Implementation of contract amendments (introduction of fallback provisions, etc.)
Sales (investor services)	• (For securities companies, in addition to the above) Implementation of initiatives for investors in coordination with issuers ⇒ (If deemed necessary) Holding investor meetings, supporting issuers to hold Bondholders' Meetings, preparing FAQs, etc.
Financing (financial institutions, etc.) **Financing and accounting (non-financial corporates)**	• Identification of issues for financial accounting and deliberation on measures to solve the issues • Checking the possibility of whether the replacement benchmark of a hedged item and that of its hedging instruments differ • Deliberation with the auditor on whether it is possible to apply hedge accounting • (In case of using Option (2)) Deliberation on treatment of accrued interest
System **Operation**	• Assessment of impact on systems and identification of requirements for system development based on firm-wide policy • Establishment of administrative procedures and company rules based on the content of system development • Establishment of administrative procedures in case of fallback which requires exceptional treatment
Risk management **Markets**	• Deliberation on modification of models using JPY LIBOR (fair value calculation, VaR calculation, etc.) • Management of operational risk including administrative and system risk • Deliberation on redeveloping methods for risk management and ALM for cases where assets and liabilities referencing RFRs are on the balance sheet
Legal	• Deliberation on measures to contain legal risk (risks arising from flaws in contracts or insufficiency in explanation to clients, conduct risk arising from sales of instruments referencing JPY LIBOR, etc.) • Revision of formats for loan and bond contracts, preparation of formats for amendment agreement

14. Public Comments

- The purpose of the public consultation is to outline the outcome of the past deliberations in the Committee and seek comments regarding the future structure of JPY interest rate benchmarks from a wide range of relevant parties (for details on specific issues subject to public comments, see Appendix 5-a of the public consultation document).
- Based on the responses to the consultation, the Committee plans to publish the deliverables reflecting the outcome of the consultation around fall 2019.

—— Financial institutions, and interest rate benchmark users such as institutional investors and non-financial corporates will need to allow for sufficient time to prepare for the permanent discontinuation of LIBOR. In making operational preparations, it would be beneficial to keep an eye on foreign currency deliberations on interest rate benchmark reform and use the deliverables based on the public consultation as reference.

Submission guideline

(i) Submission deadline
- ✓ September 30, 2019

(ii) Submission address
- ✓ Secretariat of the "Committee on Japanese Yen Interest Rate Benchmarks" (Market Infrastructure Division, Financial Markets Department, Bank of Japan)
- ✓ post.fmd33@boj.or.jp

(iii) Required information
- ✓ Your name (or the name of your organization)
- ✓ Contact information (telephone number and email address)
- ✓ Name of your organization (only if you belong to a corporate or any other type of organization)

(iv) Notes
- ✓ JPY is assumed as the dominant currency and Japanese law as the applicable law
- ✓ Base your answers on the external conditions (e.g., status of international discussions and the status of deliberation on hedge accounting) at the time

Ref.1: Overview of Deliberation by Currency (Development of Term Reference Rates)

- Currently, deliberations on development of term reference rates based on OIS or futures referencing RFRs are ongoing in major currencies with the exception of Swiss franc.
  - Switzerland has been deliberating in the direction of using O/N RFR compounding as term reference rates.

Currency	Status of Deliberation
USD	• The ARRC is deliberating to develop a term reference rate based on future or OIS referencing RFR (SOFR). • The term reference rate is recommended to be prioritized as a replacement benchmark of USD LIBOR when fallbacks are triggered.
GBP	• The Working Group on Sterling Risk-Free Reference Rates is deliberating to develop a term reference rate based on OIS referencing RFR (SONIA).
CHF	• The National Working Group on Swiss Franc Reference Rates recommended using O/N RFR (SARON) compounding as term reference rates (while shelving the development of term reference rates based on OIS referencing SARON).
EUR	• The Working Group on Euro Risk-Free Rates recommended calculating a term reference rate based on OIS referencing RFR (€STR). • The term reference rate is assumed to be used as a replacement benchmark for EURIBOR when fallbacks are triggered (Note).
[Reference] ISDA (Derivatives)	• ISDA conducted a public consultation on fallbacks for JPY, GBP, and CHF LIBOR (the overwhelming majority of respondents preferred O/N RFR Compounding (Fixing in Arrears)). • ISDA is now conducting a supplemental consultation for USD LIBOR and others.

Note: This issue comes from the context of the EU Benchmarks Regulation which requires inclusion of a fallback provision
https://www.ecb.europa.eu/paym/initiatives/interest_rate_benchmarks/WG_euro_risk-free_rates/shared/pdf/20190227/2019-02-27_WG_on_euro_RFR_meeting_Minutes.pdf

Ref.2: Members and Observers of the Committee

Members

<Banks>
- **MUFG Bank (Chair)**
- Mizuho Bank
- Sumitomo Mitsui Banking Corporation
- Bank of Yokohama
- Bank of Nagoya
- Deutsche Bank

<Institutional investors>
- Japan Post Bank
- The Norinchukin Bank
- Shinkin Central Bank
- The Dai-ichi Life Insurance Company
- Tokio Marine Holdings
- Daiwa Asset Management

<Securities companies>
- **Nomura Securities (Vice-Chair)**
- Daiwa Securities
- Goldman Sachs
- Morgan Stanley MUFG Securities

<Non-financial corporates>
- Marubeni Corporation
- Mitsui Fudosan
- East Japan Railway Company
- Mitsubishi UFJ Lease & Finance
- Nippon Telegraph and Telephone Corporation

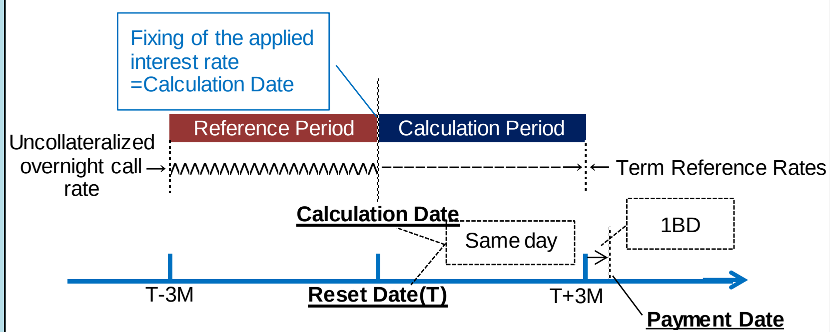
Observers

- JBA TIBOR Administration
- International Swaps and Derivatives Association
- Financial Law Board
- Tokyo Financial Exchange
- Japan Securities Clearing Corporation
- Japanese Bankers Association
- Japan Securities Dealers Association
- Financial Services Agency
- Bank of Japan

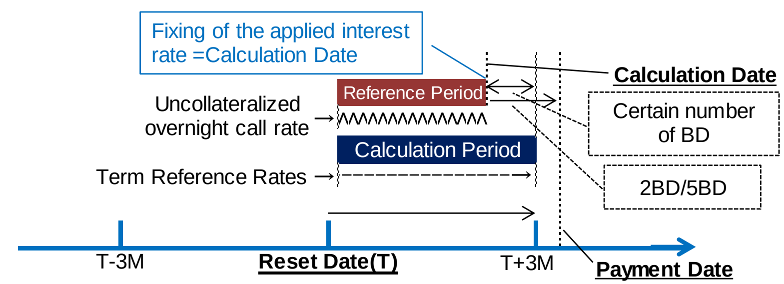
Ref.3: Requirements for Options (1) and (2)

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				

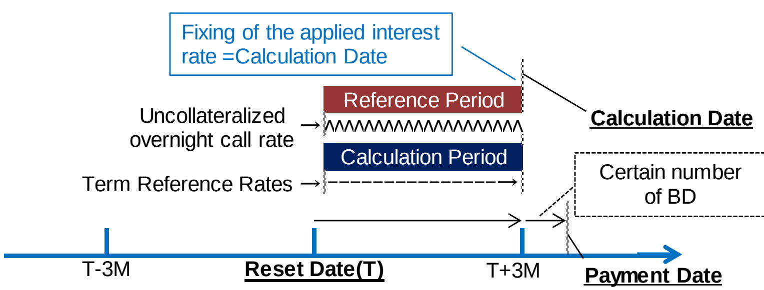
Option (1)



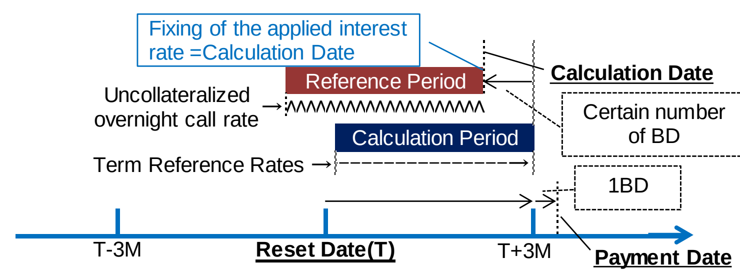
Option (2) Lock out



Option (2) Delay



Option (2) Reset days prior



* When the final requirements are decided, it is necessary to be aware that there are cases overseas where the simple average is used, in addition to compounding and that there are several cases overseas regarding the number of business days from the last day of the Calculation Period to the Payment Date.

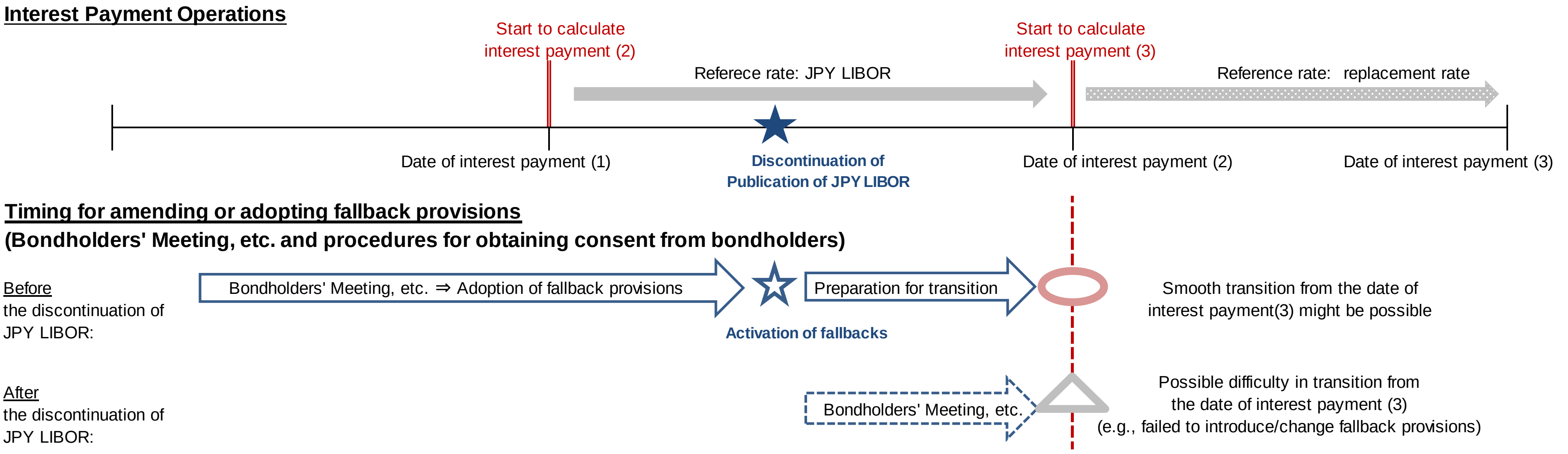
Ref.3: Requirements for Option (3)

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) ・ An appropriate contingency plan will be deliberated in advance when the benchmarks cannot be calculated by the above waterfall (e.g., continuous use of preceding benchmarks).
6. Outlier check	Statistical method (percentile estimation)
7. Quality-weighted average	Quote data on voice brokers will be weighted by the inverse of the spread between best bid and offer.
8. Data sources	Around 3 voice brokers

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

Ref.4: 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.)
- The timing for introducing or amending fallback provisions could be either (a) before or (b) after the permanent discontinuation of JPY LIBOR. However, taking into account operations including those for interest payments after the activation of fallbacks, for smooth transition, it would be desirable to introduce or amend fallback provisions in advance by holding a Bondholders' Meeting before the permanent discontinuation of JPY LIBOR.



Ref.5: 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)

<table>
<tr><td colspan="2" rowspan="3"></td><td rowspan="3">Amendment Approach
(assumed to be adopted in loans *1)</td><td colspan="3">Hardwired Approach</td></tr>
<tr><td colspan="2">Other than the right</td><td rowspan="2">Consistency with ISDA derivatives
(in case the consistency is considered important)</td></tr>
<tr><td>Choose one benchmark</td><td>Replacement benchmark waterfall</td></tr>
<tr><td colspan="2">Triggers</td><td>✓ Include a possible decision by lenders to transition as early opt-in triggers (based on agreement between parties)</td><td colspan="2">Permanent cessation trigger
Pre-cessation triggers
Early opt-in triggers (stipulate trigger events in advance)</td><td rowspan="3">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</td></tr>
<tr><td rowspan="2">Replace-ment rate</td><td>Replace-ment benchmarks</td><td colspan="2">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</td><td>[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)</td></tr>
<tr><td>Spread</td><td>Spread agreed by lenders and borrowers</td><td colspan="2">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</td></tr>
</table>

*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.