Post LIBOR_2021.09.01

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With the suspension of the Yen LIBOR publication at the end of December 2021 just ahead, I believe that financial institutions and business corporations are busy preparing for this event. Yen LIBOR has been used widely in many fields, and we have to have the different responses depending on the financial instrument and transaction details. First of all, it is important to understand the current situation by identifying the transactions in which LIBOR is used. Even if you are not directly involved in LIBOR, it would be valuable to know about the progress toward post-LIBOR. Therefore, the purpose of this series of reports is to obtain the latest information from Totan ICAP, which is an inter-dealer broker for Yen derivatives, and to provide a wide range of information to all of you through the reports, keeping in mind that it should be easily understandable.

“Alternative Interest Rate Benchmarks” for Yen LIBOR

At first, let's look at what kind of interest rate benchmarks[1] are recommended as alternatives to Yen LIBOR among the three major frameworks of Lending, Bonds and Derivatives.

Products	Recommended		Basis
Lending	**TORF**	**Compounded TONA**	Recommended by Study Committee
Bonds	**TORF**	**Compounded TONA**	
Delivatives	**Compounded TONA**		Compliant with ISDA Master

It has already been decided that the alternative interest rate benchmark for Yen LIBOR for "Derivatives" such as Yen LIBOR IRS will be the "Compounded TONA" in compliance with the ISDA Master, but for transactions that are not based on the ISDA Master, it is necessary for the contracting parties to discuss the alternative interest rate benchmark.

On the other hand, alternative interest rate benchmark for Yen LIBOR for "Lending" and "Bonds" is left to the discretion of each country, and in Japan, the "Study Committee on Japanese Yen Interest Rate Benchmarks" (hereinafter referred to as the **Study Committee**) was established in August 2018 with BOJ as the secretariat.

In the summary report of the 2nd meeting of the Consultative Committee (the "2nd Meeting")

[1] Each company may be considering which interest rate benchmark, including TIBOR, to be used for post-LIBOR as a new transaction. The word "alternative interest rate benchmarks" here refers to alternative interest rate benchmarks to Yen LIBOR used in existing transactions (Lending, Bonds and Derivatives).

released in November 2020, "Term Risk-Free-Rate (=TORF)" as 1st and "O/N RFR Compounded in arrear (=Compounded TONA)" as 2nd were recommended as alternative interest rate benchmark to Yen LIBOR for "Lending" and "Bonds". Although TIBOR was nominated as an alternative interest rate benchmark, it was not recommended in the 2nd Meeting.

TORF, which became the 1st alternative interest rate benchmark for Yen LIBOR in "Lending" and "Bonds", has been released for actual trading since April 26, 2021.

For your information, there are two major options for existing contracts that are using Yen LIBOR; "Transition" and "Fallback".

"Transition" means to change from Yen LIBOR to an alternative interest rate benchmark without waiting for the end of 2021, when the publication of Yen LIBOR will be suspended. Or, to adopt an alternative interest rate benchmark for a new contract when the contract expires. "Fallback" means to agree in advance on the treatment including the alternative interest rate benchmarks to be adopted after the end of 2021. In any case, it is important to proceed with the "Transition" as much as possible so as not to be affected by the permanent suspension of Yen LIBOR publication, although it is necessary to select an "Alternative Interest Rate Benchmark" to replace Yen LIBOR.

LIBOR and RFR

TORF, an alternative interest rate benchmark to Yen LIBOR, is known as the Term Japanese Yen RFR and TONA as the Japanese Yen RFR. Let's take a look at what RFR is and why RFR was eventually chosen to replace LIBOR.

LIBOR (: London Interbank Offered Rate) is an interest rate benchmark based on funds transactions in the London market. Yen LIBOR has been determined based on the Euroyen market (the word "Euro" was added to transactions in the London market), and USD LIBOR based on the Eurodollar market.

However, due to insufficient activity in unsecured funding transactions for each currency in the euro market, and the fact that banks quoting the rate on which LIBOR is calculated began to feel uneasy about quoting a rate that was not backed by sufficient transactions, the **IBOR Reform**[2] was implemented in each country, and the Risk Free Rate (: RFR) was specified for major currencies.

The **RFR** is an interest rate that does not reflect much of the **bank's credit risk** when it raises funds.

[2] The "IBOR Reform" is an effort to improve the reliability and robustness of the existing interest rate benchmark, the Interbank Offered Rates (IBORs), by making the system as free as possible from arbitrary judgments by rate quoters. Several countries, including Japan, are considering the "**Multiple Rate Approach**," in which each of the IBOR and RFR interest rate benchmarks is used based on the nature of the financial instrument or transaction.

LIBOR	⇒	RFR
Yen LIBOR	→	**TONA**
USD LIBOR	→	**SOFR**
EUR LIBOR	→	**ESTR**
GBP LIBOR	→	**SONIA**

RFRs for major currencies are calculated and published by each central bank based on actual funding transactions, and are thought to overcome the problems that LIBOR has had. SOFR for the US Dollar, ESTR for the Euro, SONIA for the British Pound, and in December 2016, TONA was adopted as the RFR for the Japanese Yen.

TONA and TORF

TONA (: Tokyo Overnight Average Rate) is the weighted average rate for O/N transactions in Yen uncollateralized call market, and is calculated and published by BOJ based on the data provided by the three tanshi companies. Since TONA is calculated based on transactions that start on the day of the transaction and end on the next business day, in order to use TONA as an interest rate benchmark for terms such as 1-month, 3-month, 6-month, 12-month, etc., it is necessary to compound the TONA for that period (: **Compounded TONA**). This is a "**Setting in Arrears**" method in which the rate is fixed at the end of the interest calculation period. The "final result" of TONA is announced on the BOJ website around 10:00 am on the last day of the period, and the interest rate is paid or received 2 business days later.

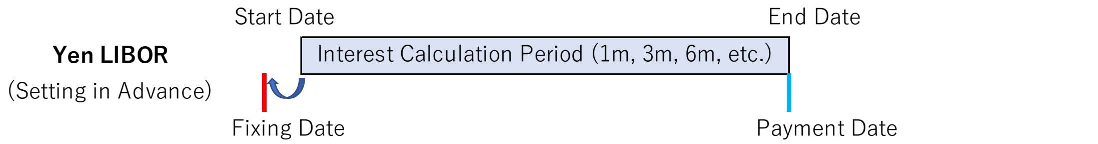
On the other hand, **TORF** (: Tokyo Term Risk-Free Rate) is recognized as a Term Japanese Yen RFR. From April 26, 2021, QBS (: QUICK Benchmarks) started to calculate and publish the "Confirmed Value" of TORF for actual trading.

Same as LIBOR and TIBOR, it is a "**Setting in Advance**" method where the rate is fixed at the beginning of the interest calculation period. There are three types of TORFs: 1-month, 3-month, and 6-month. The TORF reference rate for each tenor is calculated based on the actual trading data and quote data for the 1-month, 3-month, and 6-month at the TONA swap[3] market, and is announced around 5:00 pm on the same day.

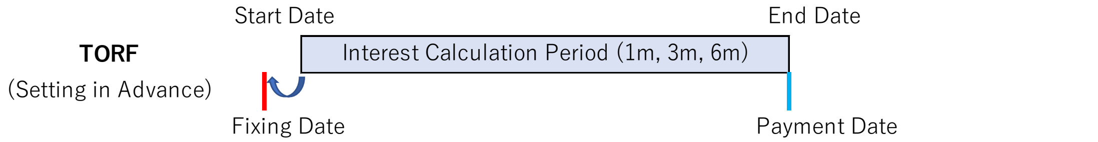
Fixing and Payment date for Yen LIBOR, TORF and compounded TONA

Yen LIBOR and TORF are "Setting in Advance" methods in which the rate is fixed at the beginning of the interest calculation period. On the other hand, the compounded TONA is a "Setting in Arrears" method in which the rate is fixed at the end of the interest calculation period. The timing for fixing the applicable interest rate and for receiving and paying interest differ between the setting in advance and the setting in arrears methods, so we will check each of them.

[3] "TONA swap" is an off-balance sheet product that exchanges a fixed rate of interest with TONA compounded in arrear for a fixed period of time. In the case of a 3-month TONA swap such as a transaction within one year, for example, the fixed rate and the 3-month compounded TONA are exchanged only once.



Setting in Advance: Rates fixed 2 business days before Start Date.



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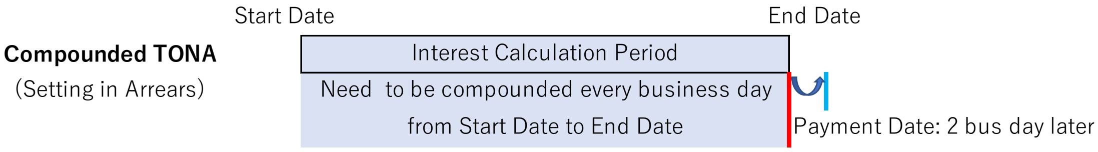
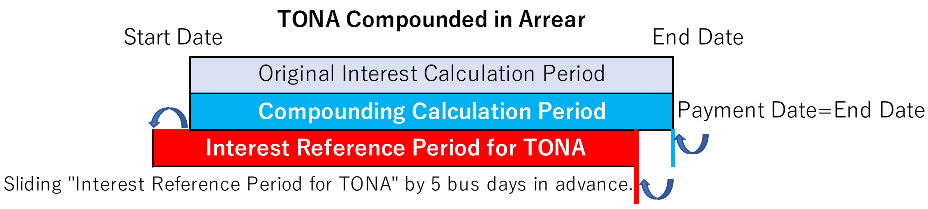


Setting in Arrears: Rates fixed at the end of interest calculation period.

The reference rates for Yen LIBOR and TORF are fixed 2 business days before the start of the interest calculation period, and the interest is received and paid at the end of the interest calculation period. On the other hand, the applicable interest rate for the compounded TONA is fixed at the end of the interest calculation period, so the interest payment date is 2 business days later than the end of the interest calculation period.

By the way, there are some demerits when using TONA compounded in arrear as the reference rate: the applicable interest rate is fixed just before the interest payment date, which makes the administration complicated, and the interest payment date is 2 business days later than the interest payment date of the setting in advance method. In particular, the following measures have been considered by the Lending Group under the Study Committee as possible obstacles for "Lending", and have received reasonable support from market participants.



Setting in Arrears:

Since the rate is fixed 5 business days before End Day, Payment Date can be same as the end of the interest calculation period.

[Lookback without Observation Shift method]

(Ex: Sliding Interest Reference Period by 5 bus days in advance)

A major example of this is the "**Lookback without Observation Shift**" method, in which the interest reference period for compounding TONA is being sliding in advance, while the compounding calculation period matches the number of days in the original interest calculation period.

Spread Adjustment

The interest rate levels of Yen LIBOR and alternative interest rate benchmarks usually do not match. Therefore, when TORF or the compounded TONA is adopted as an alternative interest rate benchmark to Yen LIBOR, a "Spread Adjustment" is required as a procedure to ensure that there is no advantage or disadvantage between the parties.

The relationship between the alternative interest rate benchmarks[4], the spread adjustment, and the successor interest rate is as follows.

Alternative Benchmark (TORF, CompoundedTONA, etc.)	+	Spread Adjustment	=	Successor Interest Rate (After Spread Adjustment)

In the 2nd Meeting of the Study Committee, it was recommended that when referring to TORF or the compounded TONA as an alternative interest rate benchmark to Yen LIBOR, it is appropriate to adopt the "5-year median approach", which adjusts the median of the difference (: spread) between Yen LIBOR and the TONA over the past 5 years.

On the other hand, for "Derivatives" such as Yen LIBOR swaps, the spread adjustment for "Compounded TONA" has already been fixed on March 5, 2021 in accordance with the ISDA Master (using the median approach for the past 5 years).

“Yen IRS Related” Page Opened

Yen LIBOR has been used for a long time in the fields of Lending, Bonds, and Derivatives, but in the post-LIBOR world, the possibility of the compounded TONA and TORF being adopted as alternative interest rate benchmarks to Yen LIBOR is increasing. In this sense, it will be more important than ever to follow the movements of the uncollateralized call O/N market, the source of TONA, and the TONA swap market, the source of TORF, on a daily basis.

With post-LIBOR in mind, Tokyo Tanshi has opened a "Yen IRS Related” page on our website (see URL below).

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[4] While ISDA defines the "**Fallback Rate**" as the alternative interest rate benchmark (after day-count adjustment) plus the spread adjustment, the Study Committee seems to call the alternative interest rate benchmark itself the "Fallback Rate" and defines the fallback rate + spread = successor interest rate (interest rate after spread adjustment). Although ISDA is supposed to cover Derivatives and the Study Committee is supposed to cover Lending and Bonds, we will try to avoid using the word "Fallback Rate" in this report because using the same word with different meanings may cause misunderstanding. Thank you for your understanding.

https://www.tokyotanshi.co.jp/en/market_data/tona/index.html

This page is composed based on the premise that products are traded in the Tokyo Yen IRS market. Aiming to make this page useful not only for those involved in Derivatives but also for those involved in Lending and Bonds, we plan to enhance the contents by adding more information on "Uncollateralized Call O/N Market" from Tokyo Tanshi and "TONA Swap Market" from our group company, Totan ICAP. Please take a look.

Appendix: Glossary of Terms

LIBOR (: London Interbank Offered Rate) is an interest rate benchmark based on funds transactions in the London market. Yen LIBOR has been determined based on the Euroyen market (the word "Euro" was added to transactions in the London market), and USD LIBOR based on the Eurodollar market.

The **RFR** is an interest rate that does not reflect much of the **bank's credit risk** when it raises funds. RFRs for major currencies are calculated and published by each central bank based on actual funding transactions, and are thought to overcome the problems that LIBOR has had. TONA was adopted as the RFR, and TORF as the Term RFR for the Japanese Yen.

TONA (: Tokyo Overnight Average Rate) is the weighted average rate for O/N transactions in Yen uncollateralized call market, and is calculated and published by BOJ based on the data provided by the three tanshi companies.

Compounded TONA (in arrears) refers to the compounding of TONA for a period of time in order to use it as a term interest rate benchmark, such as 1-month, 3-month, 6-month, or 12-month. It is a "**Setting in Arrears**" method in which the rate is fixed at the end of the interest calculation period.

TONA swap is an off-balance sheet product that exchanges a fixed rate of interest with TONA compounded in arrear for a fixed period of time. In the case of a 3-month TONA swap such as a transaction within one year, for example, the fixed rate and the 3-month compounded TONA are exchanged only once.

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Spread adjustment is a procedure to ensure that there is no advantage or disadvantage between the parties when TORF or Compounded TONA is adopted as an alternative interest rate benchmark to Yen LIBOR. The relationship between the alternative interest rate benchmarks, the spread adjustment, and the successor interest rate is as follows.

Alternative Benchmark (TORF, CompoundedTONA, etc.)	+	Spread Adjustment	=	Successor Interest Rate (After Spread Adjustment)

To Clients of the Tokyo Tanshi Co., Ltd.

If you wish to make transactions based on the information provided on this document, please make sure to pay attention to the following matters:

◇ In making transactions, clients are required to pay commission fees* for each transaction, as may be mutually agreed between the clients and the Tokyo Tanshi Co., Ltd. (hereinafter referred to as Tokyo Tanshi), in addition to the product purchase value. Certain transactions involving unlisted securities and bonds (government bonds, commercial papers, etc.) include commission fees in the purchase total or are free of charges.

* Commission fees are determined between the clients and Tokyo Tanshi according to market conditions of the time and transaction details, and thus cannot be stated in advance.

◇ Transactions may give rise to losses caused by the ups and downs of market values of financial products due to fluctuations in interest rates, etc. Thus, risks exist that losses may exceed the initial margin deposits depending on the transaction details.

◇ For accounting and tax processes of the financial products, clients should fully confirm in advance with experts such as audit firms, etc.

Upon entering into an actual transaction, please make sure to carefully read the relevant pre-contract documents and any other related documents, and execute at your own judgement and responsibility.

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