

August 15, 2022

Tokyo Financial Exchange Inc.

Actions in response to Japanese Interest Rate Benchmark Reform

Tokyo Financial Exchange Inc. (TFX) will implement the following measures in response to Japanese Interest Rate Benchmark Reform:

- 1) listing of “Three-month TONA futures” and “Three-month TONA futures option contracts” in the 4th quarter of FY 2022 (January 2023 to March 2023); and
- 2) suspension of the trading in the existing far-distant contract months for “Three-month Euroyen futures (i.e. January 2025 and beyond) and suspension of the trading in the entire contract months for “Three-month Euroyen futures option contracts”, due to the possible cessation of Euroyen TIBOR publication scheduled at the end of December 2024.

Please refer to the outlines in the Attachment 1 and Attachment 2.

* The content in this document is our current and tentative proposal and would be subject to change as a result of this public consultation in action, communications with prospective trading members and investors to prepare for the listing, and application for approval to the competent authority.

Outline for Three-month TONA futures and Three-month TONA futures option contracts (proposal)

August 15, 2022

Tokyo Financial Exchange Inc.

Item	Description	Remarks
<p>I. Trading</p> <p>1. Definitions</p> <p>(1) Three-month TONA futures</p>	<ul style="list-style-type: none"> • A “Three-month TONA futures” is a market derivatives transaction, which quotes the financial index indicated as 100 minus the figure of an interest rate per annum as compounded daily Uncollateralized Overnight Call Rate (TONA) interest during the “Reference Quarter”; TONA shall be published by the Bank of Japan (BOJ) . • “Reference Quarter” shall be, for a given contract month, the interval that ends on (but excluding) the third Wednesday of the calendar month in which the last trading day falls (“delivery month”) and begins on (and including) the third Wednesday of the calendar month preceding the delivery month by three months; provided however, that if the third Wednesday of the delivery month is a Japanese bank holiday, the interval ends on (but excluding) the immediate following Japanese bank business day and if the third Wednesday of the third calendar month preceding the delivery month is a Japanese bank holiday, it begins on (and including) immediately following Japanese bank business day. • “TONA” shall be the interest rate of Uncollateralized Overnight Call Rate for a business day expressed as “average” in percentage and published by BOJ on the following business day as the final result. • In calculating compounded interest, for any holiday belonging to the Reference Quarter, the TONA for the immediately preceding business day shall be applied to each holiday as simple interest rate (not compounded one). • “the figure of an interest rate per annum” is a percentage value of the compounded daily interest divided by the number of calendar days included in the Reference Quarter and multiplying by 365 (round off to the third decimal place). 	<ul style="list-style-type: none"> • A “market derivatives transaction” defined in Article 2(21) (ii) of Financial Instruments and Exchange Act (Act No.25, 1948, hereinafter called the “ACT”). (example) Reference Quarter for the contract month June 2023 shall be: From (and including) June 21 2023 (Wed) to (but excluding) September 20 (Wed) • Please refer to Appendix I for details.

* Disclaimer: This is an English translation of “Outline for Three-month TONA futures and Three-month TONA futures option contracts”, the original of which has been prepared in the Japanese language only. The Japanese language text hereof shall govern for all purposes and in all respects. Accordingly, all questions that may arise within or without courts of law in regard to the meaning of the words, provisions and stipulations of this Outline shall be decided in accordance with the Japanese language text. TFX assume no responsibility for accuracy, correctness, or contents of this English text. This Outline may not be reproduced nor used for any unauthorized purposes, either in whole or in part, without the consent of TFX.

Item	Description	Remarks
<p>(2) “Three-month TONA futures option contract”</p>	<ul style="list-style-type: none"> • “Three-month TONA futures option contract” means a market derivatives transaction wherein one party agrees to grant the other party an option on Three-month TONA futures and the other party agrees to pay the value of the option therefor. • Three-month TONA futures option contract traded on the Exchange Market consists of (1) an option on Three-month TONA futures to enable their grantee thereof to execute one trading unit of a sale contract for the underlying futures contract with its traded figure equal to the exercise price (hereinafter called a “put option on Three-month TONA futures”), and (2) an option on Three-month TONA futures to enable their grantee thereof to execute one trading unit of a purchase contract for the underlying futures contract with its traded figure equal to the exercise price (hereinafter called a “call option on Three-month TONA futures”). 	<ul style="list-style-type: none"> • A “market derivatives transaction” as prescribed under Article 2(21) (iii)(b) of the Act. • An “underlying futures contract” means a Three-month TONA futures contract with a specified contract month to be executed as a result of an option exercise.
<p>2. Contract month</p>		
<p>(1) Listed Contract Months</p>	<p>(i) Three-month TONA futures</p> <ul style="list-style-type: none"> • 20 contract months <p>(ii) Three-month TONA futures option contract</p> <ul style="list-style-type: none"> • 5 contract months 	
<p>(2) Period</p>	<p>(i) Three-month TONA futures</p> <ul style="list-style-type: none"> • The period of 5 years shall be applied to the contract months. <p>(ii) Three-month TONA futures option contract</p> <ul style="list-style-type: none"> • The period of 15 months shall be applied to the contract months. 	
<p>(3) First Trading Day</p>	<ul style="list-style-type: none"> • The first trading day for each contract month is the trading day immediately following the last trading day for the then first expiring contract month, and such new contract month shall become available for trading from the opening of its first trading day’s day session. 	<ul style="list-style-type: none"> • A “trading day” shall be a period commencing on the opening of the evening session that starts after the day session on the business day immediately preceding a specific business day and ending on the close of the day session that starts on such specific business day.

Item	Description	Remarks
<p>(4) Last Trading Day</p>	<p>(i) Three-month TONA futures</p> <ul style="list-style-type: none"> The last trading day shall be the trading day, the day session of which occurs on the third Wednesday day (if such day falls on a Japanese bank holiday, the day immediately following such day which is a Japanese banking day) of March, June, September or December. <p>(ii) Three-month TONA futures option contract</p> <ul style="list-style-type: none"> The last trading day shall correspond to that of its respective underlying futures contract. 	<p>(example)</p> <p>Last Trading Day for the contract month June 2023 shall be September 20 (Wed), traded until 9:30.</p> <ul style="list-style-type: none"> Please refer to the attached examples in Referential Document.
<p>(5) Settlement Day</p>	<ul style="list-style-type: none"> The final settlement day is the business day immediately following the business day on which there occurs the day session of the last trading day. 	
<p>3. Setting Exercise Price</p> <p>(1) Setting new exercise prices</p> <p>(2) Setting additional exercise prices</p>	<ul style="list-style-type: none"> On the business day on which the day session of the first trading day for each contract month falls, TFX shall calculate the figure equal to an integral multiple of 0.125, the nearest to the Official Closing Price for the respective contract month of the underlying futures contract calculated on the previous business day (“option criterion price”) and set the next 6 upper figures above the price and the next 6 lower figures below the price at intervals of 0.125 respectively, resulting in total 13 figures set as the exercise price. TFX shall calculate each business day’s option criterion price for each contract month, in accordance with the conditions described (1) above, resulting in total 13 figures. If these 13 figures include any figure that has not yet been listed, such figure shall be additionally listed as the exercise price. 	<ul style="list-style-type: none"> The Official Closing Price is a price that TFX shall calculate and inform after the close of the evening session of each business day. In principle, exercise price shall not be abolished. TFX may additionally list new exercise prices when the Exchange deems necessary to do so.

Item	Description	Remarks
4. Matching Algorithm	<ul style="list-style-type: none"> The matching of the trades is based on the auction method. 	<ul style="list-style-type: none"> The auction method means the trade shall be executed on an individual auction basis.
5. Trading Hours	<ul style="list-style-type: none"> The same Pre-open period, Day session and Evening session as for Three-month Euroyen futures and Three-month Euroyen futures option contracts shall be adopted, save that the last trading day's Day session with respect to each contract month for Three-month TONA futures and Three-month TONA futures option contracts shall be "from 8:45 to 9:30". 	
6. Trading Unit, etc.,		
(1) Trading Unit	<ul style="list-style-type: none"> (i) Three-month TONA futures <ul style="list-style-type: none"> 1 Basis point value (price fluctuation of 0.01) = 2,500 yen (ii) Three-month TONA futures option contract <ul style="list-style-type: none"> One Trading Unit for Three-month TONA futures. 	
(2) Bid/Offer	<ul style="list-style-type: none"> Order types are Limit Order and Market Order. Bid/Offer is quoted to the third decimal place (indicated by an integral multiple of 1/1000). Minimum price fluctuation of bids and offers is 0.001 (0.1 tick = 250 yen). 	<ul style="list-style-type: none"> During the Pre-open period, a Market order shall always be submitted with "On-Open" modifier. TFX may reject any bid or offer when TFX finds such reject necessary to ensure a fair market and the trading system's stable operation. Maximum order volume Trading Member can submit in a single order is 99,999 lots.
7. Trading Member	<ul style="list-style-type: none"> An Entity that intends to trade Three-month TONA futures and Three-month TONA futures option contracts shall obtain the "Japanese Yen Interest Rate Trading Membership" or "Japanese Yen Interest Rate Remote Trading Membership" as the case may be. 	<ul style="list-style-type: none"> "Euroyen Futures Trading Membership" and "Euroyen Futures Remote Trading Membership" will be renamed as "Japanese Yen Interest Rate Trading Membership" and "Japanese Yen Interest Rate Remote Trading Membership".

Item	Description	Remarks
<p>II. Clearing</p> <p>1. Margin and Mark-to-Market</p> <p>2. Payments and receipts of option premiums</p> <p>3. Open Interest and Settlement</p> <p>4. Exercise</p> <p>5. Clearing Member</p>	<ul style="list-style-type: none"> • The same rules as for Three-month Euroyen futures and Three-month Euroyen futures option contracts shall be adopted, save that daily settlement prices for option contracts shall be theoretical prices calculated by the formula in Appendix II. • The same rules as for Three-month Euroyen futures option contracts shall be adopted. • The same rules as for Three-month Euroyen futures and Three-month Euroyen futures option contracts shall be adopted, save that the final settlement price for Three-month TONA futures shall be the figure calculated by “Financial Index Calculation Methodologies for Three-month TONA futures” in Appendix II. • The same rules as for Three-month Euroyen futures option contracts shall be adopted. • An entity that intends to act as a counterparty in the financial futures obligation assumption business for Three-month TONA futures and Three-month TONA futures option contracts shall obtain Interest Rate Futures Clearing Membership. 	<ul style="list-style-type: none"> • In calculating the theoretical prices, the applicable interest rate “r” shall be changed from Euroyen TIBOR 3-month to Japanese Yen TIBOR 3-month. • Exercise style: American Type
<p>III. Fees</p> <p>1. Per-contract Exchange fee</p> <p>2. Brokerage Commission</p>	<ul style="list-style-type: none"> (i) Three-month TONA futures <ul style="list-style-type: none"> • Per-contract Exchange Fee is 100 yen in principle. (ii) Three-month TONA futures option contracts <ul style="list-style-type: none"> • Per-contract Exchange Fee is 50 yen in principle. • The amount and method of payment of brokerage commission charged to a customer by a Trading Member shall be negotiated and agreed beforehand between such customer and such Member. 	<ul style="list-style-type: none"> • Consumption tax, etc. is charged in addition.

Item	Description	Remarks
<p>IV. Others</p> <p>1. Strategy Trades</p> <p>2. Block Trades</p> <p>3. Give-up Trades</p> <p>4. Market Maker Program</p>	<ul style="list-style-type: none"> • Calendar Spread is allowed for Three-month TONA futures as strategy trade. • Block trades are available for Three-month TONA futures and Three-month TONA futures options contracts. • Trading Members who intend to execute a block trade shall make an application to TFX during trading hours excluding the last 15 minutes of each session (i.e. prior to the close of the day session and the close of the evening session) and the period between 11:30-12:30. • Minimum volume for an application of a block trade is 100 contracts. • Give-up trades are available for Three-month TONA futures and Three-month TONA futures option contracts. • Three-month TONA futures and Three-month TONA futures option contracts will be included as the designated products under the Market-Making program. 	<ul style="list-style-type: none"> • Strategy trade is a trade whereby the multiple sale contract(s) and/or purchase contract(s) are all simultaneously executed, each type of combination of the multiple contracts being separately specified by TFX. • Packs and Bundles will not be available at the time of listing. • Block trades are, with prior application to TFX, having buy and sell orders of the same contract month simultaneously executed outside competitive auction. • Give-up means that Executing Member (Trading Member who has executed a trade of Three-month TONA futures or Three-month TONA futures options contracts) have another Trading Member clear such trade. • Take-up means that Trading Member undertake clearing of Three-month TONA futures and Three-month TONA futures options contracts.

Financial Index Calculation Methodologies for Three-month TONA futures

$$\text{Financial Index} = 100 - R$$

$$R = [\prod_{i=1}^n \{ 1 + (r_i/100) \times (d_i/365) \} - 1] \times (365/D) \times 100$$

n : The number of business days in the Reference Quarter

I : As for each business day in Reference Quarter (“reference business day”), a series of whole numbers, each representing “i”th reference business day in chronological order from the first reference business day in the Reference Quarter”.

Π : Capital pi (Π) indicates the terms to be compounded.

(example) $\prod_{i=1}^n \alpha_i = \alpha_1 \times \alpha_2 \times \alpha_3 \times \dots \times \alpha_n$

r_i : The value of Uncollateralized Overnight Call Rate (TONA) for “i”th reference business day, which is expressed as “average” in percentage and published by the Bank of Japan (BOJ) on the following business day as the final result

(example) If the value of TONA for an applicable reference business day is 0.019%, then r_i = 0.019

d_i : The number of calendar days during Reference Quarter to which r_i applies.

Any calendar day that is not a business day (i.e., weekend days, holidays) shall be included in “d_i” and for such days, r_i for the reference business day immediately preceding the calendar day shall apply.

(examples) If “i”th reference business day is a Monday, a Tuesday, a Wednesday, or a Thursday, and the following calendar day is a business day, then d_i = 1.
(i.e. r_i applies for 1 calendar day)

If “i”th reference business day is a Friday and the following Monday is a business day, then d_i = 3.
(i.e. r_i applies for 3 calendar days.)

D : The number of calendar days in Reference Quarter $\sum_{i=1}^n d_i$

The value of R is rounded to 3rd decimal place.

Theoretical Option Price Formula

The theoretical call option price (hereinafter shown as “C”) and the theoretical put option price (hereinafter shown as “P”) shall be calculated by reference to the following formulae:

$$C = e^{-rt} [FN(d) - KN(d - \sigma\sqrt{t})]$$

$$P = C - e^{-rt} (F - K)$$

As used in the above formula, “d” shall be calculated by reference to the following formula:

$$d = [\ln(F/K) + \sigma^2 t / 2] / \sigma\sqrt{t}$$

Where:

F : daily settlement price of the underlying futures contract

e : Napier's number

t : number of days elapsed up until the option exercise date / 365

K : strike price

Σ : implied volatility calculated for each series of options in the manner prescribed by the Exchange / 100

r : Three-month Japanese Yen TIBOR as published by General Incorporated Association JBA TIBOR Administration (JBATA) on the relevant date divided by 100 and rounded to the nearest 2nd decimal point

N(x) : cumulative density function of the standard normal distribution where the value is x

ln : Napierian logarithm

Examples of the Last Trading Days for option contracts and underlying futures contracts

Option Contracts			Underlying Futures Contracts		
Product	Contract Month	Last Trading Day	Underlying Futures Contract	Contract Month	Last Trading Day
Three-month TONA futures option contracts	June 2023	September 20, 2023 (Wed) , available for trading until 9:30 a.m.	Three-month TONA futures	June 2023	September 20, 2023 (Wed) , available for trading until 9:30 a.m.
【For Reference】 Three-month Euroyen futures option contracts	June 2023	June 19, 2023 (Mon) , available for trading until 11:00 a.m.	Three-month Euroyen futures	June 2023	June 19, 2023 (Mon) , available for trading until 11:00 a.m.

Suspension of trading in the far-distant contract months of Three-month Euroyen futures and suspension of whole trading of Three-month Euroyen futures option contracts (Proposal)

Attachment 2

August 15, 2022

Tokyo Financial Exchange Inc.

項 目	内 容	備 考
1. Products and Contract Months to be suspended	(i) Three-months Euroyen futures • A Contract month whose last trading day arrives in and after January 2025 (hereinafter referred to as "far-distant contract months"). (ii) Three-month Euroyen futures option contracts • All contract months	• Publication of Three-month Euroyen TIBOR, the underlying asset of Three-month Euroyen futures, by JBA TIBOR Administration (JBATA) is assumed to cease at the end of December 2024.
2. Trading Suspension Date	• The trading suspension date will be the date in the first quarter of 2022 (January to March 2023) and shall be separately designated by the Exchange.	
3. Limitation of Trading	• Trading in the far-distant contract months of Three-months Euroyen futures and whole trading of all contract months of Three-month Euroyen futures option contracts will be suspended at 8:00 pm on the immediately preceding business day before the trading suspension date.	• Trading Members cannot trade contract months that are suspended on and after the trading suspension date. • A Trading Member who has positions for the suspended contract months shall liquidate the positions by 8 pm on the immediately preceding business day before the trading suspension date. (example) If March 20 2023 (Mon) is the trading suspension date, positions for the suspended contract months shall be liquidated by 8 pm on March 17 2023 (Fri). • Existing positions after the trading suspension date shall be liquidated at the price designated by the Exchange.