Market consultation on Adjusted THBFIX in the event of LIBOR cessation

1. Introduction and objective of the consultation

The steering committee on commercial banks' preparedness on LIBOR discontinuation (the committee) is consulting marketing participants in the Thai financial markets, especially those potentially affected by the LIBOR cessation through its linkage to THBFIX-based products. The consultation focuses on the Adjusted THBFIX methodology in the case of LIBOR cessation, focusing in particular on derivative products, and will remain open on the Bank of Thailand's website until 27 March 2020. **Please provide feedbacks via the form on the Bank of Thailand's website at https://www.bot.or.th/Thai/FinancialMarkets/Pages/LiborTHBFIX.aspx and email your responses to FMD-standards@bot.or.th by 27 March 2020,** clearly indicating that you are submitting a response in the subject line of your email. **The deadline will not be extended.** The committee hopes to receive feedback from as broad a range of market participants as possible, including from different sectors and product categories.

After reaching the final conclusion for the methodology, the Bank of Thailand, as the THBFIX administrator, will cooperate with the International Swaps and Derivatives Association (ISDA) to prepare for derivatives contract amendments. The fallback rate will apply to legacy derivatives contracts referencing THBFIX. However, for cash products, the committee expects to provide suggestions or guidelines within the second half of 2020.

1.1 LIBOR discontinuation:

Systematic manipulation of LIBOR exposed flaws, vulnerabilities and deficiencies in regulatory oversight and governance. Although regulators have tried to make significant improvements to such indexes, these efforts were not very successful. In combination with the significant decline in volume of term borrowing and lending transactions after the Global Financial Crisis, the Financial Conduct Authority announced in 2017 that they will no longer compel or persuade panel banks to submit quotes for LIBOR post 2021[1].

[1] https://www.fca.org.uk/news/speeches/the-future-of-libor

1.2 Derivatives contract amendment

In July 2016, the Financial Stability Board's Official Sector Steering Group (FSB OSSG) asked ISDA to assist in the work process to enhance the robustness of derivatives contracts referencing widely used benchmarks.

Following consultation with market participants, regulators and the FSB OSSG, it was determined that the LIBOR fallbacks for derivatives will be based on the **nearly risk free rates (RFRs), identified by National Working Groups of five-LIBOR currency countries**. **Moreover, ISDA has announced that Bloomberg Index Services Limited (together with its affiliates Bloomberg) will produce and publish the compounded setting in arrears rate, the spread adjustment and the "all-in fallback rate".** In this regard, Bloomberg will begin publishing this information on an "indicative" basis prior to the effective date of the amendments to implement the fallbacks and will continue to publish the information on an ongoing basis after a fallback trigger event occurs.

For Thailand, the discontinuation of LIBOR also poses a significant concern given that USD LIBOR is used in the calculation of THBFIX, which is widely used as a reference rate for various financial products in Thailand (as per the formula below)[2]:

$$\text{THBFIX} = \left\{\left[\left(\frac{Spot\ Rate + Forward\ Points}{Spot\ Rate}\right) \times \left(1 + \frac{USD\ Libor \times \#days}{360}\right)\right] - 1\right\} \times \frac{365}{\#days} \times 100$$

Currently there are two possibilities for replacing the USD LIBOR in the formula. The first option is to use the recommended alternative for USD LIBOR, SOFR (the Secured Overnight Financing Rate), which will be compounded in arrears. The second possibility is to use a term SOFR as a replacement rate so that the THBFIX fallback retains its forward looking characteristic, but this term rate is still in development and far from being fully established. **At this juncture, the committee views that the first alternative** is the appropriate choice for Thailand as it could expedite and establish a clear work process for the market during the transition period.

2. Methodology for Adjusted THBFIX calculation

The calculation of THBFIX fallback (named Adjusted THBFIX) utilizing SOFR rate as a USD LIBOR replacement, which is in line with international practices as recommended by ISDA,

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[2] For more information, please refer to https://www.bot.or.th/App/THBFIX/en (metadata tab)

needs to be adjusted for the term structure and the credit risk and other factors (e.g. liquidity). The consultation will seek market participants' opinions regarding the calculation methodology for these factors in the following sections.

2.1 Adjustment for the term structure

While the USD LIBOR is published for various tenors, SOFR is an overnight rate. Therefore, to move from a "term" to an "overnight" rate, the fallbacks ISDA has chosen will apply an adjustment to the overnight RFRs so that it is comparable to the relevant IBORs (i.e. Adjusted RFRs). In this regard, four possible approaches[3] were opened on ISDA's consultation as follows:

- Spot overnight rate approach
- Convexity-adjusted overnight rate approach
- Compounded setting in arrears rate approach
- Compounded setting in advance rate approach

Results of ISDA's consultation: the results of the market-wide consultation published on July 12th, 2018 (2018 Consultation), and a supplemental market-wide consultation published on May 16, 2019 (Supplemental Consultation) established that "the overwhelming majority of respondents preferred the **compounded in arrears rate to address the difference in tenors between IBORs and overnight RFRs.**"[4]

Q1: Regarding the calculation of Adjusted THBFIX by utilizing Adjusted SOFR, are there any concerns over using the compounded setting in arrears approach? Please list, rank, and elaborate these concerns in detail if there are any.

2.2 Adjustment for credit risk and other factors

As mentioned earlier, the current THBFIX utilizes USD LIBOR in its calculation, which by nature is embedded with bank's credit risks and other factors, while Adjusted SOFR is considered a risk-free or nearly risk free rate. Therefore, in replacing USD LIBOR with Adjusted SOFR in a THBFIX fallback calculation, the fallback rate must also be adjusted to account for credit risk and other factors. Although it is impossible to fully capture these factors given a

[3] The potential advantages and disadvantages of these approaches are discussed in the July 2018 Consultation which can be found at http://assets.isda.org/media/f253b540-193/42c13663-pdf/ (p.8-11)

[4] https://www.isda.org/a/935TE/2019.11.15-ISDA-Final-Parameters-Consultation-Report.pdf (p.2)

permanent cessation of USD LIBOR, a spread adjustment could be applied to the relevant adjusted SOFR rate as the most appropriate proxy available.

In this regard, three possible methodologies for calculating the spread have been proposed in the 2018 and 2019 ISDA's consultations, which are the (i) Forward Approach, (ii) the Historical Mean/Median Approach and (iii) the Spot-Spread Approach[5].

- **Results of the ISDA market consultation:** Results from the recent ISDA market consultation showed that market participants preferred the spread adjustment to be calculated based on **the historical median of differences between the IBORs and Adjusted RFR (i.e. Adjusted SOFR) calculated over a 5-year look-back period prior to the relevant announcement or publication triggering the fallback provisions.** Moreover, it will be calculated and published for each relevant IBOR tenor. Therefore, the spreads will differ across different tenors for the same IBOR, and the spread adjustment will be added to the compounded setting in arrears rate after compounding[6]. Once calculated, the spreads are static across the rest of the contracts' maturities after the eventual LIBOR trigger events occur.

Q2: Do you agree with the ISDA's calculation methodology for the spread adjustment by using the historical median over a 5 year look-back period? If not, please provide recommendations specifically.

2.3 Adjusted THBFIX formula

To be consistent with ISDA's approach, Adjusted THBFIX will be calculated by utilizing Adjusted SOFR and spread as a USD LIBOR replacement for each Adjusted THBFIX tenor. Please note that the calculation agent and publisher of Adjusted THBFIX will be announced at a later date. Other key inputs (i.e. USDTHB spot rate and swap points in each tenor) will remain based on actual transactions[7].

$$\text{Adjusted THBFIX} = \left\{\left[\left(\frac{Spot\ Rate + Forward\ Points}{Spot\ Rate}\right) \times \left(1 + \frac{(adjusted\ SOFR + spread) \times \#days}{360}\right)\right] - 1\right\} \times \frac{365}{\#days} \times 100$$

5 Details of the difference approaches can be found at https://www.isda.org/a/n6tME/Supplemental-Consultation-on-USD-LIBOR-CDOR-HIBOR-and-SOR.pdf

6 https://www.isda.org/a/Ua0TE/Consultation-on-Parameters-for-Fallback-Adjustments.pdf (p. 3)

7 Please refer to Appendix 2 for the historical comparison between the current THBFIX and adjusted THBFIX

2.4 Adjusted THBFIX publication

Each of the published Adjusted THBFIX rates will be calculated using the latest available data, which also includes Adjusted SOFR rate and spread published by Bloomberg. However, SOFR is published at 8.00 a.m. New York time (T+1 from its underlying repo transactions) which is equivalent to 7.00-8.00 p.m. Bangkok time (T+1), implying that the SOFR rate used in the calculation will be one-day delayed. Moreover, if the aforementioned SOFR rate is revised and republished at 2.30 p.m. New York time (T+1), this means that the revised SOFR rate used in the calculation will be delayed by 2 days (2.30 a.m. Bangkok time)[8]. Therefore, Adjusted THBFIX will be published on a daily basis on following morning (Bangkok time) the relevant Adjusted SOFR data has been finalized.

3. Convention in using Adjusted THBFIX for legacy derivatives contracts referencing THBFIX

Using Adjusted SOFR as the USD LIBOR fallback changes the current market practice from knowing the interest rate at the beginning of the interest period to the end of the interest period (i.e. on the payment date). Therefore, in order to allow market participants sufficient time to prepare their payments without having to change the payment dates, the committee suggests that **market participants observe the rate 2 business days prior to the payment date**, which is in line with the majority of respondents to the 2019 ISDA's consultation on the Final Parameters[9].

Q3: Are you agreeable with derivatives settled by referencing to Adjusted THBFIX of 2 business days prior to the payment date? If not, please explain in specific details.

4. Triggers

For derivatives, trigger events of Adjusted THBFIX should align with ISDA's practice as well, which will be based upon two circumstances (See details on Consultation on Certain Aspects of Fallbacks for Derivatives Referencing GBP LIBOR, CHF LIBOR, JPY LIBOR, TIBOR, Euroyen TIBOR and BBSW)[10]. However, the pre-cessation trigger events have not been included in the triggers as the previous consultation result of pre-cessation issue[11] has no majority preference. In this

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[8] Please note however, that the time lag of adjusted SOFR publication depends on Bloomberg

[9] http://assets.isda.org/media/3e16cdd2/d1b3283f-pdf/ (p. 5-6)

[10] http://assets.isda.org/media/f253b540-193/42c13663-pdf/ (p.5-6)

[11] http://assets.isda.org/media/e0b1bac2/04397355-pdf/ (p.15)

regard, ISDA has recently launched a new consultation on how to implement pre-cessation fallbacks for derivatives[12] on February 25th. The committee will follow the results of ISDA's consultation on pre-cessation issues, which is expected to be released in April-May.

5. Results of the consultation

The committee will compile and publish an anonymized version of the results and provide regular updates on important issues on the Bank of Thailand's website (https://www.bot.or.th/Thai/FinancialMarkets/Pages/ReferenceInterestAndEndOfUseLIBOR.aspx). Should you have any questions, please do not hesitate to contact the Bank of Thailand's Financial Markets Department at FMD-standards@bot.or.th.

[12] https://www.isda.org/2020/02/25/isda-launches-new-consultation-on-pre-cessation-fallbacks/

Appendix 1

Why has the Bank of Thailand chosen to progress forward with Adjusted THBFIX without leaving room for the possibility of incorporating a term SOFR should it become available so that the fallback rate will be forward looking in nature?

This is the most common point of concern for market participants so far. While the Bank of Thailand understands that using a forward looking term SOFR as a replacement for USD LIBOR in the current THBFIX calculation methodology (i.e. plugging in a term SOFR for USD LIBOR in the formula above) would indeed allow for the smoothest transition; however, there are a number of reasons why the BOT chooses to proceed in such manner.

- **Firstly, the publication of such a forward looking term rate is not guaranteed**. In this regard, the Alternative Reference Rate Committee (ARRC) has announced that "*those who are able to use SOFR should not wait for the term rates in order to transition… [and] it is not in the interest of market participants to put off taking action nor can the ARRC guarantee that an administrator can produce a robust, IOSCO-compliant forward-looking term rate before LIBOR stops publication.*"[13] Given this uncertainty, making the necessary preparations to accommodate both a backward looking and forward looking rate is challenging, both in terms of the man power and operational configurations required. Moreover, even if a term SOFR rate is published, it is most likely that it will not be before 4Q 2020, which would leave the committee with very little time to make all the necessary preparations.
- **Secondly, many central banks and monetary authorities around the world have expressed a clear preference for the market to adopt a broad-based transition to compounded in arrears rates, with the use of a term rate being limited.** For example, the US authorities had noted that the forward-looking term SOFR they plan to develop "*will likely never be as robust as SOFR itself, and so derivatives transactions will almost certainly need to be based on the overnight rate, but a term reference rate could conceivably be used in some loan or other contracts that currently reference LIBOR.*"[14] Moreover, the Working Group on Sterling Risk-Free Reference Rates in the UK has announced that "*The use of a SONIA [Term SONIA Reference Rate] TSRR will be*

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13 https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2019/Users_Guide_to_SOFR.pdf (p.2)

14 https://www.federalreserve.gov/newsevents/speech/files/powell20171102a.pdf (p.5)

limited...if use of a TSRR became widespread, there is a risk of reintroducing structural vulnerabilities similar to those associated with LIBOR. These risks can be avoided by limiting the use of TSSRs to certain product use cases and certain borrowers."[15] Therefore, to avoid any possible legal issues regarding the usage of term SOFR, the committee believes it is better not to utilize term SOFR. The fact that the ARRC does not recommend the usage of a term SOFR is also recognized by other countries such as Singapore[16].

- **Thirdly, the usage of a compounded in arrears risk free rate is in line with international practices**, meaning that they will be available across all currencies where a RFR is available. This, therefore, supports multi-currency borrowers to apply a consistent approach where possible.
- **Finally, it will also be important for market participants to get accustomed** to the new market practice of using a backward looking rate going forward.

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15 https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/use-cases-of-benchmark-rates-compounded-in-arrears-term-rate-and-further-alternatives.pdf?la=en&hash=22BA20A8728D9844E5A036C837874CA3E70FEAE1 (p.6)

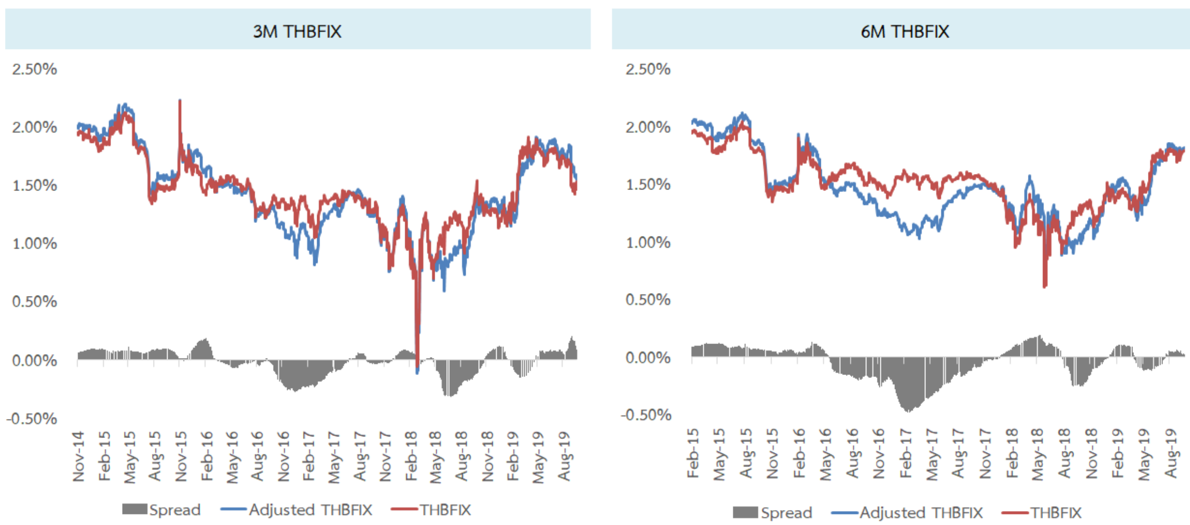
16 See the Association of Banks in Singapore (ABS) and Singapore Foreign Exchange Market Committee's (SFEMC) paper on "Roadmap for Transition of Interest Rate Benchmarks: From SGD Swap Offer Rate (SOR) to Singapore Overnight Rate Average (SORA)"

Appendix 2

Historical back test of Adjusted THBFIX[17]

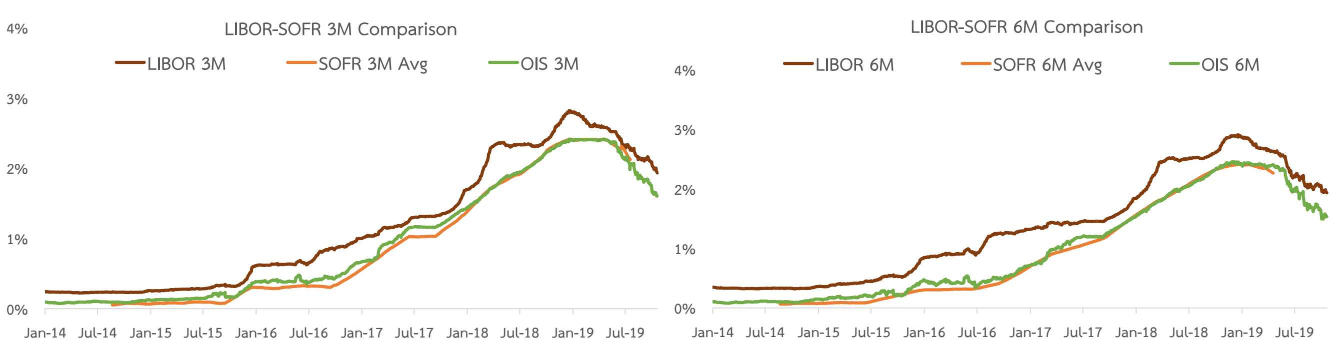
Using historical data, it can be seen that the proposed methodology for calculating Adjusted THBFIX yield rather similar results to the actual historical THBFIX, except for some periods in which there were minor divergences that could arise from factors associated with LIBOR.

Historical comparison between the current THBFIX and adjusted THBFIX



In this regard, the charts below illustrate that compounded SOFR (orange line) moved along with OIS rate (green line) most of the time while USD LIBOR (red line) sometimes diverted from OIS rate and compounded SOFR.

Historical comparison between LIBOR and SOFR



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[17] Note: the graphs are created using (i) a constant day count (i.e. approximately 90 days for a 3 month period and 180 days for a 6 month period) and (ii) the Effective Fed Fund Rate (EFFR) as a proxy for SOFR prior to its publication in April 2018