Transition Roadmap of Thai Reference Rate

From THBFIX to Thai Overnight Repurchase Rate (THOR)

Bank of Thailand

January 2021

1. Interest Rate Benchmarks in Thai Financial Markets

At present, there are 2 interest rate benchmarks commonly referenced in Thai Baht floating rate financial contracts, i.e. THBFIX (Thai Baht Interest Rate Fixing) and BIBOR (Bangkok Interbank Offered Rate). THBFIX is a swap-implied rate, therefore it will be sensitive to USD liquidity rather than domestic money market liquidity conditions. Additionally, LIBOR permanent cessation put THBFIX at risk as LIBOR is a component in the calculation of THBFIX. Meanwhile, BIBOR is an uncollateralized interbank lending rate which is vulnerable to lower underlying transactions as well as an illiquid hedging market. Like other IBORs, a significant decline in the volume of term borrowing and lending transactions after the Global Financial Crisis rules out the effort to reform BIBOR from a survey-based rate to a transaction-based rate.

In 2019, the Bank of Thailand (BOT), in collaboration with the Thai Bankers' Association (TBA) and the Association of International Banks (AIB), has established the Steering Committee on Commercial Banks' Preparedness on LIBOR Discontinuation (the committee) whose key tasks include proposing the replacement rate of THBFIX if LIBOR cessation occurs, and developing an alternative reference rate.

2. Roadmap for THB Interest Rate Benchmarks

2.1 THBFIX and its fallback

THBFIX is the synthetic rate for deposits in THB, by borrowing USD for the same maturity and swapping out the USD in return for THB. THBFIX is widely used for two major purposes. First, it is used as a reference rate for floating rate products including derivatives, loans, and notes. Second, it is used for mark-to-market valuation.

With regard to LIBOR cessation, the Secured Overnight Financing Rate (SOFR)[1] is considered as the appropriate replacement for USD LIBOR. However, SOFR is considered as a risk-free or nearly risk-free rate, whereas USD LIBOR by nature is embedded with banks' credit risks and other factors (e.g. liquidity premium). Therefore, a spread is added on SOFR to make it a comparable replacement rate for USD LIBOR.

Once LIBOR ceases to be published, the BOT, as the THBFIX administrator, has established that the fallback rate for THBFIX (named Fallback Rate (THBFIX)) will be calculated by using SOFR plus a spread (named Fallback Rate (SOFR[2])) as a replacement for USD LIBOR in the original THBFIX formula, which is in line with international practices recommended by the International Swaps and Derivatives Association (ISDA).

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

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

A shift from THBFIX to Fallback Rate (THBFIX) only mitigates the impacts of LIBOR discontinuation; however, it doesn't alleviate the pains of referencing a swap-implied rate. An interest rate derived from the FX swap market is rather volatile following high fluctuation in USD liquidity. It will occasionally not reflect local financial market conditions and may be inconsistent with the policy rate. Another significant drawback is the low volume of standard term swap transactions which is essential for a reliable transaction-based reference rate. More importantly, under ISDA's definitions, the Fallback Rate (THBFIX) is not meant to be a benchmark for new derivative transactions, rather they are contractual fallback for existing THBFIX contracts in the event of a permanent cessation or pre-cessation of USD LIBOR.

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[1] SOFR is an overnight rate published by the Federal Reserve Bank of New York.

[2] Fallback Rate (SOFR) = Compound SOFR + fixed spread. Fallback Rate (SOFR) is published by Bloomberg, who has been selected by the International Swaps and Derivatives Association (ISDA) as the fallback adjustment vendor to calculate and publish adjustments related to IBOR fallbacks. The compound SOFR in Bloomberg's calculated is slightly different from the compound SOFR published by the Federal Reserve Bank (SOFR Average). The BOT's decision to use Bloomberg's publication to calculate the fallback rate is line with international practices.

Consequently, **Fallback Rate (THBFIX) could be used only as the fallback rate in THBFIX legacy contracts. New contracts (both derivative and cash), entering into after 2021[3], should be linked to other benchmarks**, for instance, THOR which is an alternative reference rate first published in April 2020. Fallback THBFIX will be published for as long as it is deemed necessary, which will mainly depend on both the remaining outstanding Fallback THBFIX contracts and the development of an overnight index swap (OIS) to hedge contracts referencing THOR.

2.2 Thai Overnight Repurchase Rate (THOR): the alternative reference rate

To establish an alternative reference rate that can represent local financial market conditions, support monetary policy transmission mechanism, and meet international standards for financial benchmark, various underlying markets had been explored as follows.

- **Uncollateralized Interbank Lending:** Uncollateralized interbank loans are underlying transactions of BIBOR, a survey-based rate introduced in 2005. Transaction volumes in this market are generally low and almost none-existent for tenors longer than 3-months, which undermines the use of BIBOR as a reference rate. The most liquid tenor is overnight lending, however its transaction volume is only one-third of an overnight repo market.
- **Government/Central Bank Bill:** Advantages of developing a reference rate from the Treasury bills or Central Bank bills are that these rates are considered risk-free and trading volumes are high. However, they are periodically influenced by supply and demand factors and therefore does not reflect funding activities of banks.
- **Repurchase Transaction (Repo):** Repo is the main channel for Thai financial institutions to manage their daily liquidity; however, transactions are concentrated in the overnight market. Demand for long-term borrowing is limited due to excess liquidity in money market which allows day-to-day liquidity management. Thus, there are insufficient term repo transactions to build a reliable term benchmark on a daily basis, either on the basis of a survey-based or a transaction-based benchmark. On the

[3] Or after mid-2023, depending on the confirmation from IBA and relevant authorities

other hand, the overnight repo market is liquid, making it very difficult to manipulate or influence a reference rate being fixed from transactions in this market. Moreover, the overnight interbank repo reflects financial institutions' funding costs, which significantly help transmit monetary policy better than other alternative rates.

As a result of thorough assessment and industry-wide consultation, **the overnight interbank repo is considered to be the most suitable underlying market** for the new alternative reference rate of Thai financial market. The new Thai reference rate is named Thai Overnight Repurchase Rate (THOR).[4]

THOR, the overnight rate, was first published in April 2020, together with THOR Average which is the compounding-in-arrears rate for 1, 3 and 6 months. Furthermore, the BOT plans to develop an OIS market which will be useful in deriving a forward-looking THOR curve.

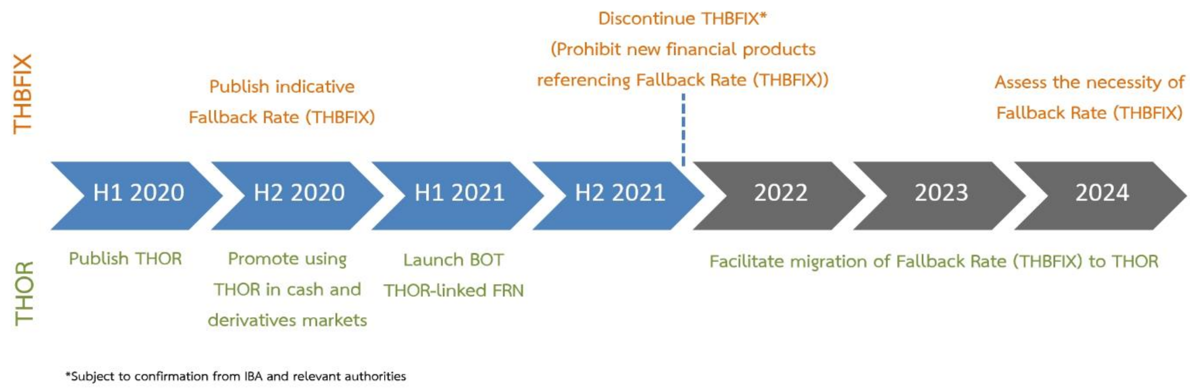
2.3 BIBOR

BIBOR was first introduced in 2005 to be an interest rate benchmark reflecting local market conditions, however it is less preferred compared to THBFIX. The main reason is because its underlying market is not liquid enough for market participants to trade or to hedge BIBOR exposure. Nevertheless, referencing BIBOR has one benefit over referencing Fallback THBFIX and THOR, i.e. interest amounts of BIBOR-linked contracts is known at the beginning of interest period (forward-looking term rate). The BOT realizes that, despite the thin liquidity, BIBOR might be a preferred rate for those who need a forward-looking term rate, hence **the BOT will maintain its roles as administrator and distributor to ensure the reliability and availability of BIBOR**.

3. Development timeline

[4] Repo transactions with nonbank counterparties are excluded from the calculation of THOR. This is because repo with nonbank is subjected to contribution paid to the Financial Institution Development Fund (FIDF) or the Specialized Financial Institutions Development Fund, therefore it is generally transacted at a lower yield than interbank repo.

To promote THOR as a new reference rate in derivatives, loans and bonds, the BOT has put in place a phased development timeline which involves phasing out from THBFIX and establishing new markets for THOR-linked derivatives and cash products.



- **H1 2020:** **Introducing THOR as a new reference rate** for both derivatives and cash products. Moreover, to promote the widespread usage of THOR, its compounding-in-arrears term rates have been published (named THOR Average). Clients may find it more convenient to reference THOR Averages which are made available for 1-, 3- and 6-month tenors. THOR index and THOR calculator will also be provided for facilitating usage in different conventions.
- **H2 2020:** **Publishing the indicative Fallback Rate (THBFIX)** so that market players can evaluate the impact if Fallback THBFIX becomes enforced and can prepare themselves for a seamless adoption.

  Promoting the widespread usage of THOR by encouraging the issuance of cash products referencing THOR and exploring measures to establish a THOR-based OIS market. Recommended conventions for interbank THOR OIS and ISDA supplement for THOR are already available, therefore trading THOR curve and hedging THOR exposure are feasible.
- **H1 2021:** **Launching the BOT's THOR-linked floating rate notes.**

- **End 2021: Discontinuing THBFIX** in response to LIBOR permanent cessation and THOR market development plan (subject to IBA's market consultation results and relevant authorities' decision to extend the publication of USD LIBOR to mid-2023, this milestone may also be extended to mid-2023).
- **2022:** **Fallback Rate (THBFIX) becomes effective** and will be used only for legacy contracts (if the extension of USD LIBOR publication is confirmed, Fallback Rate (THBFIX) may become effective on 1st July 2023). ..

  Facilitating the shift from Fallback Rate (THBFIX) to THOR in order to reduce the stock of Fallback Rate (THBFIX) exposure. With respect to this, the BOT will publish the spread adjustment for the migration.
- **2024:** **Commence on-going assessment of when to stop publishing Fallback Rate (THBFIX)**. The decision is data-dependent, relying on remaining outstanding of Fallback Rate (THBFIX) exposure and liquidity in THOR OIS market. The last date of publication will be pre-announced.