Transition Roadmap of Thai Reference Rate

From THBFIX to Thai Overnight Repurchase Rate (THOR)

Bank of Thailand

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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. Thai Baht Interest Rate Fixing (THBFIX) and Bangkok Interbank Offered Rate (BIBOR). THBFIX is a swap-implied rate, therefore it is sensitive to USD liquidity rather than domestic money market liquidity conditions. Additionally, the future loss of representativeness of USD LIBOR puts THBFIX at risk as USD 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 the future permanent cessation and loss of representativeness of LIBOR, 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

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

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.

To prepare for a non-representativeness of USD LIBOR after end of June 2023, 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).

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

$$\Downarrow$$

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

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 it is a contractual fallback for existing THBFIX contracts in the event of a permanent cessation or a non-representativeness of USD LIBOR. **Consequently, Fallback Rate (THBFIX) will be published only until the end of 2025 to be used as a stop-gap in THBFIX legacy contracts. New contracts (both derivative and cash) must be linked to other benchmarks**, for instance, THOR which is an alternative reference rate first published in April 2020.

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[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.

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 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).[3]

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[3] 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.

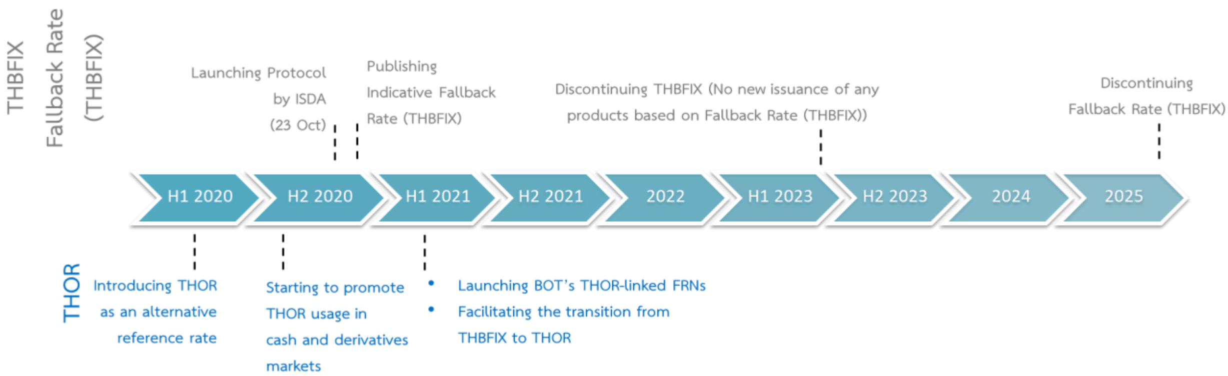
THOR, the overnight rate, was first published in April 2020, together with THOR Average which is the compounding-in-arrears rate for 1, 3, and 6 months.

2.3 BIBOR

BIBOR was first introduced in 2005 to be an interest rate benchmark reflecting local market conditions. It is less preferred comparing to THBFIX because its underlying market, which is the uncollateralized interbank lending, is not liquid enough for market participants to trade or to hedge BIBOR exposure. Nevertheless, referencing BIBOR has one benefit over referencing Fallback (Rate) 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 an administrator and a distributor to ensure the reliability and availability of BIBOR.

3. Development timeline

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 Rate (THBFIX) becomes enforced and can prepare themselves for a seamless adoption.
  Starting to promote 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.**
  Facilitating the transition from THBFIX to THOR in order to reduce the future stock of Fallback Rate (THBFIX) exposure.

- **Mid 2023: Discontinuing THBFIX** in response to the non-representativeness of USD LIBOR.
  Fallback Rate (THBFIX) becomes effective and will be used only in THBFIX legacy contracts.

- **End 2025: Stop publishing Fallback Rate (THBFIX)**. According to ISDA's IBOR Fallbacks Supplement and IBOR Fallbacks Protocol, in the event of Fallback Rate (THBFIX) permanent cessation, THOR with term structure adjustment will replace Fallback Rate (THBFIX).[4]

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[4] More details are in the Supplement number 70 to the 2006 ISDA Definitions (IBOR Fallbacks Supplement); http://assets.isda.org/media/3062e7b4/23aa1658-pdf/