The Bank of Thailand's Monetary Operations Framework

I. Monetary Policy under Inflation Targeting Framework

Under the flexible inflation targeting framework, the Bank of Thailand (BOT) formulates monetary policy, as determined by the Monetary Policy Committee (MPC)[1], to support sustainable and full potential economic growth without causing inflationary problems or economic and financial imbalances. The MPC meets approximately every 6 to 8 weeks to assess economic and financial conditions as well as risk factors that may affect future inflation and economic growth. In each meeting, the MPC makes a monetary policy decision by either raising, maintaining, or lowering the policy interest rate with an aim to achieve an inflation target[2]. The MPC uses the **1-day bilateral repurchase rate** as the policy interest rate to signal shifts in monetary policy stance.

II. Implementation of Monetary Policy

The BOT implements the MPC's policy interest rate decisions by managing liquidity in the banking system through various monetary instruments, namely, Reserve Requirements, Open Market Operations, and Standing Facilities. The monetary operations are designed to

- **Meet the liquidity needs of the banking system** for both required reserves (see section on Reserve Requirements) and settlement balances in order to ensure that the liquidity condition in the system remains appropriate and supportive of

[1] Under the Bank of Thailand Act, the Monetary Policy Committee (MPC) comprises the governor and two deputy governors, as well as four distinguished external members representing various sectors of the economy, with the aim of ensuring that monetary policy decisions are effective and transparent.

[2] The inflation target is set to assure the general public that the MPC will take necessary policy actions to return domestic inflation to the target within an appropriate time horizon without jeopardizing growth and macro-financial stability. The Cabinet approved the annual average headline inflation target of 1-3 percent for the medium- term horizon and for the year 2021. For further details please refer to https://www.bot.or.th/English/MonetaryPolicy/MonetPolicyKnowledge/Pages/Target.aspx

money market rates that are consistent with the policy interest rate. These will also help **enhance the efficiency and effectiveness of the market mechanism and monetary policy transmission in the long run**.

- **Foster the development of financial markets and strengthen financial stability**

Monetary Instruments

1. Reserve Requirements

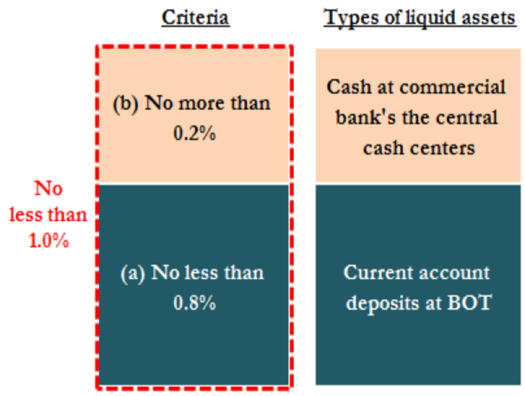
Reserve requirements are the amount of cash that commercial banks are required to maintain in reserve accounts on average against specified liabilities base over a specified period of time (a maintenance period). The Maintenance period is a fortnight (14 days) starting on a Wednesday and ending on a second Tuesday thereafter.

Currently, the **minimum reserve requirement ratio** is set at 1 percent[3] of the average level of commercial bank's liabilities base in the previous maintenance period.

$$\frac{\text{Reserves}_{t}}{\text{Liabilities base}_{t-1}} \geq 1\%; \quad t = \text{Maintenance period}$$

Commercial banks in Thailand must hold **reserves** in the form of (a) non-remunerated current account deposited at the BOT at no less than 0.8 percent and (b) vault cash kept at a commercial bank's the central cash centers at no more than 0.2 percent (Figure 1). The balances of (a) and (b) that satisfy the Reserve Requirement exclude

Figure 1: Compositions of reserve requirements



[3] Since 2016, the new prudential liquidity regulation, namely, the Liquidity Coverage Ratio (LCR) came into effect, replacing the Liquid Asset Requirement imposed on commercial banks (Bank of Thailand Notification No. FPG 7/2555). For the purpose of monetary policy implementation, however, banks are still required to maintain, on average over a fortnight, a minimum reserve requirement of 1% of their liabilities base.

the balances of money received in advance that commercial banks separately maintain in compliance with the payment system law.[4]

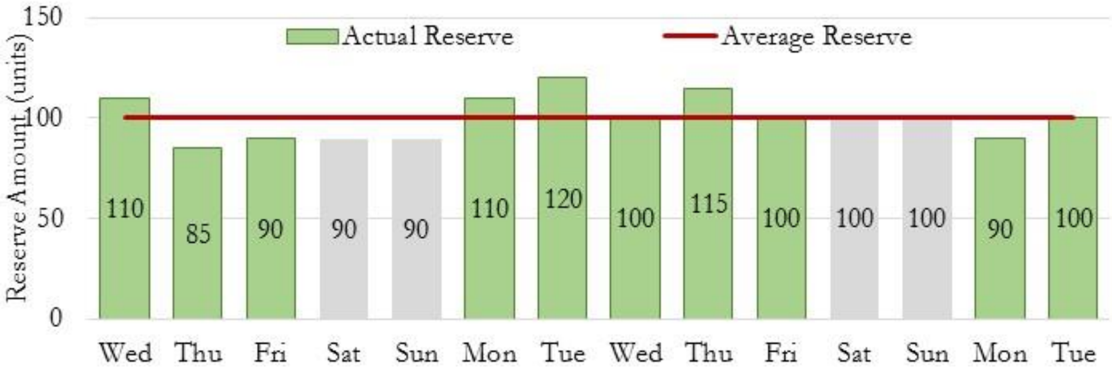
The **liabilities base** comprises of the following elements:

- All types of deposits,
- Borrowings through issuance of bills of exchange or promissory notes,
- Short-term foreign borrowings maturing within one year, and
- Other borrowings with index-linked returns or embedded financial derivatives

To allow commercial banks to have greater flexibility in daily liquidity management, the BOT applies two important features as follows:

- **Averaging scheme**: Compliance with reserve requirements is determined on the *average* of the end-of-day reserve balances over a maintenance period (including weekend). Such averaging scheme will help reduce daily volatility in short-term interest rates. For example, a bank may maintain reserves below (above) the amount required on a particular day without necessarily borrowing (lending) from the interbank market. Instead, it could choose to increase (decrease) its reserves holding on other days within the same maintenance period. This mechanism could prevent an upward (downward) pressure on the interbank rates on a specific day.

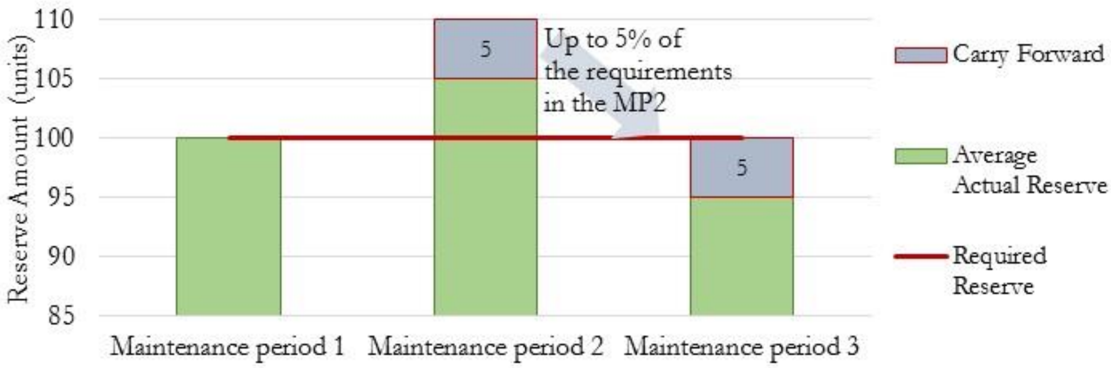
Example: Averaging Scheme



[4] In 2018, the BOT issued a new regulation for payment service providers under the payment system law regarding the treatment of money received in advance from service users. The regulation stipulates that when the payment service provider is a commercial bank, the balance of money received in advance can be maintained in the commercial bank's current account at the BOT or held at the institution but separated from other assets.

- **<u>Carry-forward provision</u>**: Commercial banks can also carry forward their excess reserves towards next maintenance period's requirements by up to 5 percent of the requirements in the previous period. The carry-over provision will help reduce interest rate volatility on the last day of the maintenance period.

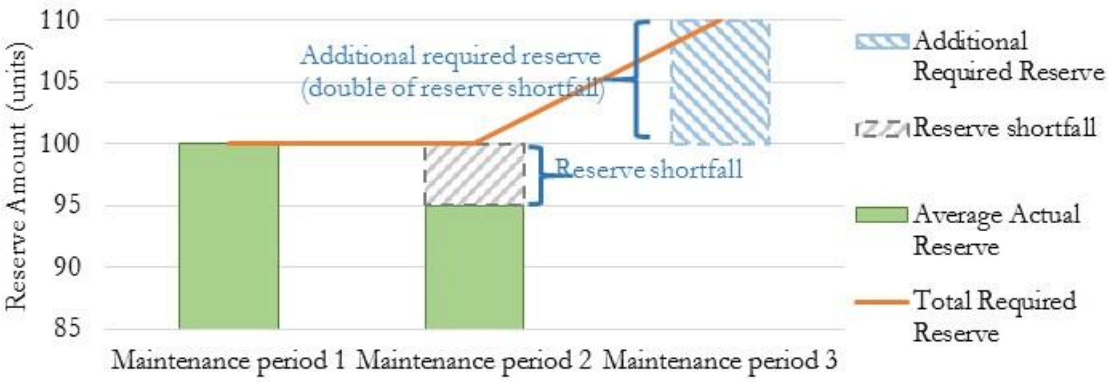
Example: Carry-forward provision



In the case that commercial banks maintain reserves (including the carry-forward amount from the previous period) below the minimum required level, they are obliged to hold additional reserves in the next period by two times of the reserve shortfall. The banks cannot maintain the reserves below the required level for more than four consecutive maintenance periods.

Example: Additional required reserve when there is a reserve shortfall

(Assuming that banks are required to hold minimum reserve of 100 units in every period)



2. Open Market Operations

In conducting open market operations (OMOs), the BOT undertakes transactions in the financial markets by selling or purchasing financial instruments in order to absorb or inject liquidity available to the banking system. The BOT employs four types of OMOs as follows:

- Bilateral repurchase operations
- Issuance of Bank of Thailand bills and bonds
- Foreign exchange swaps transactions
- Outright purchase/sale of public sector debt securities

2.1 Bilateral Repurchase Operations

The BOT uses bilateral repurchase (BRP) or reverse repurchase transactions to temporarily add or drain reserves available to the banking system. The transaction involves a purchase or sale of public sector debt securities[5] with an agreement to reverse the transaction at an agreed price and date in the future. This effectively is cash lending (i.e. injecting liquidity) or cash borrowing (i.e. absorbing liquidity) with debt securities used as collateral. The repurchase/reverse repurchase prices would equal to the loan amount plus interest.

Since 2006, the BRP operation has been used as a primary channel to manage daily liquidity which could fluctuate due to seasonal patterns and government cash flows. The BRP operation is conducted through the appointed **Primary Dealers** (PDs) who effectively act as liquidity adjustment intermediaries between BOT and other financial institutions.

The BOT may conduct either a fixed-rate tender or a variable-rate tender depending on maturities of the BRP operation.

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[5] Including government bonds and bills, BOT bonds and bills, and state-owned enterprise bonds guaranteed by the government or with AAA rating.

- **A fixed -rate tender** (at policy rate) is used for 1-day tenor in order to enhance signaling effect of the policy stance. The PDs only submit the amount they wish to transact with the BOT.
- **A variable-rate tender** applies for all other longer-maturity transactions, namely, 7-day, 14-day and 1-month tenors. Under this approach, the PDs are required to indicate amount and submit spreads over (or under) the policy rate. An interest rate on a given term BRP contract is thus indexed to the policy rate. If the MPC cuts or raises the policy rate during the duration of such term BRP operations, the interest rate charged or earned on those transactions will be adjusted accordingly.

Normally, the BRP transactions are carried out every morning (between 9.30 – 9.45 am). Before 9.30 am, the BOT notifies the PDs that the BOT plans to conduct bilateral operation at specific maturities on that day. The PDs have 15 minutes to respond with their tenders, and by 10.00 am the BOT informs each PD the results of their biddings. The settlement has to be completed by 2.00 pm on the same day and fee charges will be applied in case of any settlement delays or defaults.

However, on the MPC's meeting days, the BRP operation is conducted after an announcement of the MPC's interest rate decision (around 2.30 pm) to allow the change in the policy rate (if any) to take effect on the same day. In addition, the BOT may consider conducting a special round of BRP operation, if necessary, at 4.00 pm to fine-tune liquidity in the system.

The BOT's BRP operation has been designed such that it conforms to international market practices. For example, initial haircuts[6], margin calls and marking to market of collateral are applied. The BRP operation under the PD system has fostered the development of the Thai money market by stimulating interbank activities, via both the private repurchase

[6] A haircut is expressed as the percentage deduction from the market value of collateral (using the market price published by ThaiBMA). Different haircuts are applied depending on the types of collateral and its remaining maturity.

market and the uncollateralized interbank market, and by encouraging financial institutions to implement best market practices.

2.2 Issuance of Bank of Thailand Bills and Bonds

The BOT has issued the BOT bills and bonds since 2003 with an aim to expand the range of monetary instruments used to absorb structural liquidity surplus in the banking system. This also helps foster the development of the debt securities market in Thailand by enhancing its liquidity and efficiency.

The BOT bills and bonds are issued through two types of auctions: competitive multiple-price auctions and non-competitive bidding auctions.

- **Competitive Multiple-Price Bidding (CB)**: The eligible bidders need to submit their bids by indicating both quantities and yields. The bidder who offers the lowest yield (the highest price) will have the first priority to be allocated the bonds. The rest of the bonds will be allocated consecutively to the next bidders who offer a higher yield. The eligible competitive bidders[7] are commercial banks, specialized financial institutions, finance companies, securities companies, Government Pension Fund, provident funds, mutual funds, Social Security Office, life and non-life insurance companies, and other institutions holding their current accounts at the BOT.
- **Non-competitive Bidding (NCB)**: The eligible bidders need to indicate only the quantities and submit their bids through primary dealers appointed by the Ministry of Finance (MOF Outright PDs). The eligible non-competitive bidders – including foundations, cooperatives and non-profit organizations – will get preferential allocation and pay at the weighted-average accepted yield on the successful competitive bids.

[7] This is the same institutions as those eligible for the bidding of Treasury bills and Government bonds. However, the Ministry of Finance limits a list of eligible bidders for certain benchmark government bonds to MOF Outright PDs.

All bids need to be submitted through e-Bidding system by 9.30 am and the settlement has to be completed by 10.00 am on the second business day following the auction date.

For BOT bonds with original maturity of one year or above, the BOT may offer the Post-Auction Options (PAOs) whereby all successful competitive bidders have the right to purchase an additional amount of up to 20 percent of their allocated amounts at the weighted-average accepted yield. The PAOs will be offered when the relevant auction's bid-to-cover ratio is at least two and the issue is fully allocated at that auction.

Auction schedule

In determining issue size and maturity distribution of BOT bonds, on a monthly basis, the BOT considers prevailing money and bond market conditions as well as government's funding plan. Frequency of issuance varies according to the type and maturity of the securities as summarized in the table below:

Type	Maturity	Auction Date	Auction Frequency
Discount bills	1 month	Tuesday	As appropriate
	3 month	Tuesday	Weekly
	6 month	Tuesday	As appropriate
	1 year	Tuesday	Monthly
Fixed-coupon bonds	2 year	Thursday	Monthly
	3 year	Thursday	As appropriate
Floating-rate bonds	6-month to 3-year	Thursday	Monthly

The monthly auction calendar with details of the specific issue is announced on the BOT website.

On an annual basis, the BOT consults with BRP PDs and e-Outright counterparties to gather market views and gauge market demand for next year's bond issuance. The BOT also closely coordinates with the Public Debt Management Office (PDMO) to take into account the forthcoming supply of treasury bills and government bonds as well as state-owned enterprise bonds. The BOT publishes its annual bond issuance programme in advance so as to facilitate effective liquidity management by market participants.

2.3 Foreign Exchange Swaps

The BOT uses a foreign exchange swap (FX swap) as a supplementary tool to absorb liquidity in the banking system. The FX swap is similar to BRP operation; the difference being that the Thai baht is exchanged for foreign currency (such as the US dollar) rather than domestic debt securities. The FX swap greatly enhances the BOT's liquidity management especially when collateral used for BRP operation is limited.

The BOT conducts the FX swap transactions in a fairly flexible manner, depending broadly on market conditions and needs. In order to withdraw liquidity from the banking system, the BOT usually carries out sell-buy swap transaction in the **over-the-counter (OTC)** market throughout the day with both onshore and offshore commercial banks[8]. The BOT can either directly call commercial banks asking for quotes or access the swap market via brokers. The market-based price is therefore determined on a case-by-case basis. The settlement usually takes place one or two business days afterwards, though the BOT occasionally allows same-day settlement in exceptional circumstances. Standard tenors for FX swaps transactions are overnight up to one year.

2.4 Outright Purchase/Sale of Public Sector Debt Securities

The BOT can permanently inject or absorb liquidity in the banking system by purchasing or selling public sector debt securities outright with appointed **e-Outright counterparties**. Although eligible securities include all types of public debt securities, the

[8] Offshore counterparties consist of a limited number of overseas commercial banks, while onshore counterparties are all locally-operated commercial banks.

BOT primarily conducts outright purchase operations on government and BOT bonds thanks to their high liquidity in the secondary market.

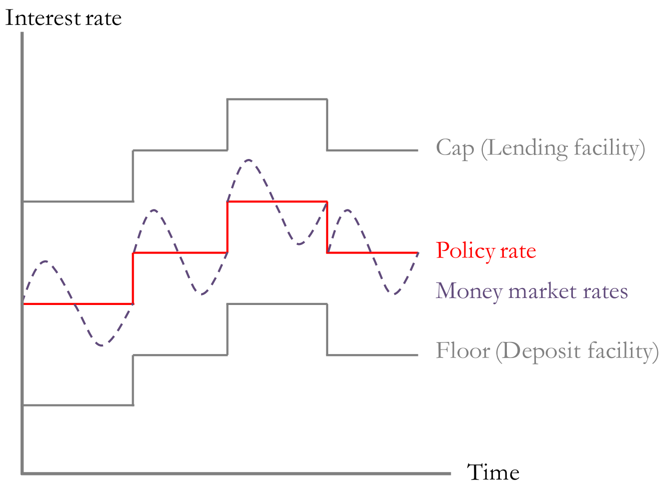
The procedure for outright operation involves the BOT notifying e-Outright counterparties before 10.00 am the specific securities that the BOT would like to buy or sell. E-Outright counterparties have an hour to respond with their bids/offers including yields and amounts. The **multiple-price auction** procedure is employed, and the BOT will inform the auction result to individual counterparties by noon. The settlement takes place two business days afterwards.

3. Standing Facilities

In addition to open market operations, the BOT also provides two types of standing facilities – Lending Facility and Deposit Facility – on an overnight basis to help financial institutions adjust their liquidity position at the end of the day.

- **Lending Facility**: Financial institutions with insufficient liquidity can borrow funds overnight through Lending Facility and get charged at the policy rate plus a margin.
- **Deposit Facility**: Financial institutions with excess liquidity can deposit funds overnight through Deposit Facility and get paid at the policy rate minus a margin.

Figure 2: Interest rate corridor



The standing facilities provide an important mechanism that helps limit the volatility of short-term money market rates since they set a cap and a floor on overnight market interest rates, essentially forming **an interest rate corridor** (Figure 2). The width of the corridor is designed to ensure that it is sufficiently wide to encourage market participants to adjust liquidity amongst themselves while at the same time narrow enough to ensure that market interest rates will fluctuate within an acceptable range. Currently, the margin is set at +/- 0.5 percent per annum.

Although there is no explicit limit on the amount each financial institution could borrow through Lending Facility, availability of collateral will effectively act as a cap. Similar to BRP operations, the same list of eligible collateral and initial haircut are applied. The eligible collateral includes government bonds and bills, BOT bonds and bills, and state-owned enterprise bonds guaranteed by the government or with AAA rating. In addition, a range of eligible collateral accepted for the Lending Facility has been expanded to include foreign government bonds and certain foreign currencies. In the case where financial institutions do not repurchase the collateral from the BOT within the specified time and date, a penalty may be applied.

Such overnight lending facility is also provided as part of the BAHTNET Real Time Gross Settlement (RTGS) system to accommodate any spillover from the free-of-charge **Intra-day Liquidity Facility** (ILF). In the event that the intra-day liquidity is not repaid by the end of the day, banks will be charged the same interest rate as that of the end-of-day Lending Facility, thereby effectively using the standing overnight credit facility.

These facilities are available to all financial institutions whose deposits are at the Bank of Thailand, including commercial banks, finance companies, credit fonciers, and specialized financial institutions and other juristic persons specified by the BOT. All transactions through the Standing Facilities are settled on the same day. Standing Facilities are available every working day at 5.00-5.30 pm. However, the hours may be extended in case of some technical problems related to the settlement system.

More details on the BOT Regulations and Notifications of the monetary instruments

(Thai version only)

1. Reserve requirements
https://www.bot.or.th/English/FinancialMarkets/MonetaryOperations/ReserveRequirement/Pages/default.aspx
2. Open market operations
Bilateral repurchase operations
https://www.bot.or.th/English/FinancialMarkets/MonetaryOperations/BilateralRepurchase/Pages/default.aspx
Issuance of Bank of Thailand bills and bonds
https://www.bot.or.th/English/FinancialMarkets/MonetaryOperations/BOTBond/Pages/default.aspx
Outright purchase/sale of public sector debt securities
https://www.bot.or.th/English/FinancialMarkets/MonetaryOperations/OutrightPurchaseandSale/Pages/default.aspx
3. Standing facilities
Deposit facility
https://www.bot.or.th/English/FinancialMarkets/MonetaryOperations/DepositFacility/Pages/default.aspx
Lending facility
https://www.bot.or.th/English/FinancialMarkets/MonetaryOperations/LendingFacility/Pages/default.aspx