

MONETARY POLICY INSTRUMENTS OF THE MAGYAR NEMZETI BANK



MONETARY POLICY INSTRUMENTS AND MONETARY POLICY STRATEGY

MONETARY POLICY INSTRUMENTS FROM JANUARY 2024

MONETARY POLICY INSTRUMENTS USED BETWEEN 2020 AND 2023 AS CRISIS MANAGEMENT TOOLS

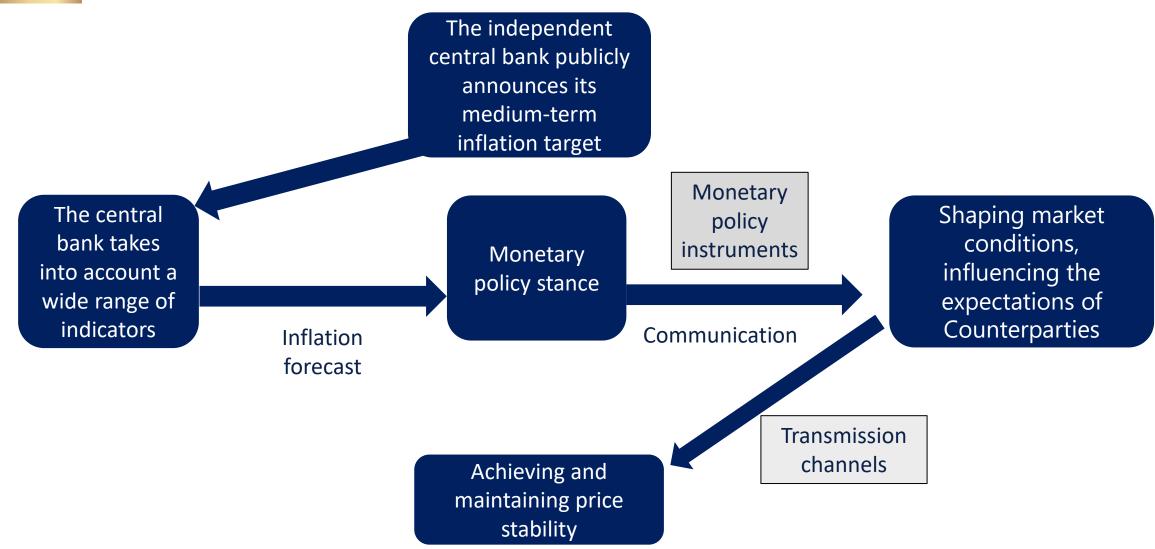
ELEMENTS OF THE INFLATION TARGETING STRATEGY





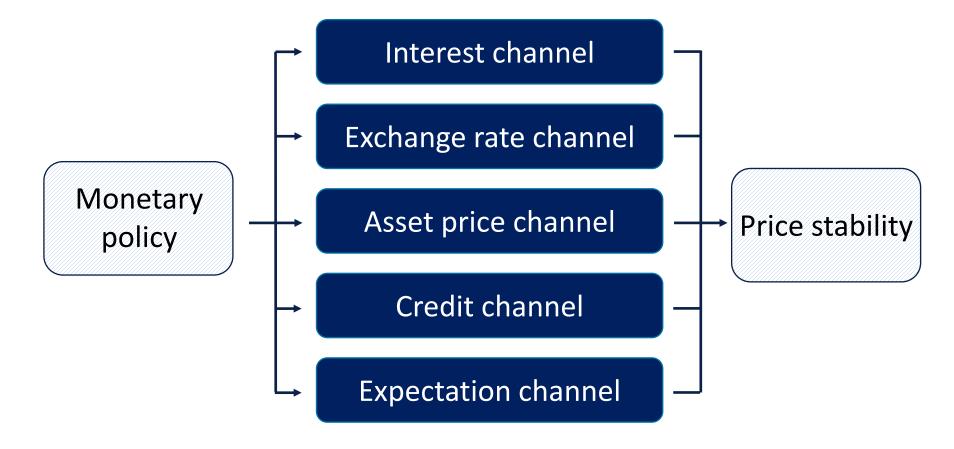
THE OPERATION OF THE INFLATION TARGETING SYSTEM





TRANSMISSION CHANNELS OF MONETARY POLICY





Inflation targeting is not a simple, mechanical rule, it provides a strategic, analytical and communicational framework

THE MNB'S OBJECTIVES DEFINED BY THE MNB ACT



Primary objective

Achieving and maintaining price stability

- Inflation targeting system
- Numerical inflation target (CPI, consumer price index)
- > Tolerance band

Secondary objectives

Financial stability

- Supervisory authority
- Payment and settlement systems
- Macroprudential tools

Real economic objectives

- Supporting economic policy
- Supporting environmental sustainability

Achieving the secondary objectives is only possible without jeopardizing the primary mandate of price stability.

THE GENERAL SET OF INSTRUMENTS ASSIGNED TO THE PRIMARY MANDATE OF THE MNB



Final target: achieving price stability – Predictable and credible monetary policy to keep inflation low and stable

"The primary objective of the MNB shall be to achieve and maintain price stability."

Strategy: inflation targeting – numerical medium-term (6-8 quarters)

Announcement of inflation target → Intermediate objective: Inflation forecast should be close to the inflation target [MNB's intermediate inflation target: 3% (consumer price index) ± 1 percentage point (tolerance band)]

Final target:

Price stability

Intermediate objective:

Intermediate objective:

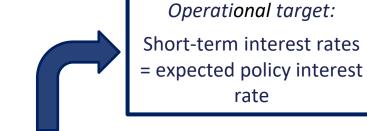
Inflation forecast =

= intermediate inflation target

Direct operational target: short-term rates are in line with the policy rate and expectations



Effective monetary policy instruments



Policy instrument:

Required reserves

BASIC PRINCIPLES OF THE DESIGN AND IMPLEMENTATION OF MONETARY POLICY INSTRUMENTS



TRANSMISSION

Strengthening the guiding nature of the policy rate ensuring the effective transmission

EFFICIENCY

Achieving monetary policy objectives at the lowest possible cost

TRANSPARENCY

Increasing transparency, streamlined operational framework

MARKET CONFORM OPERATION

Using a framework in line with the best market practices

EQUAL TREATMENT

Ensuring neutral treatment of the central bank counterparties

MNB'S MONETARY POLICY COUNTERPARTIES





Money Market Counterparties: domestic credit institutions subject to reserve requirements and technical conditions

- Direct member of VIBER or Interbank Clearing System (BKR)
- In the case of collateralised loans and securities transactions they have a securities account with KELER Zrt.

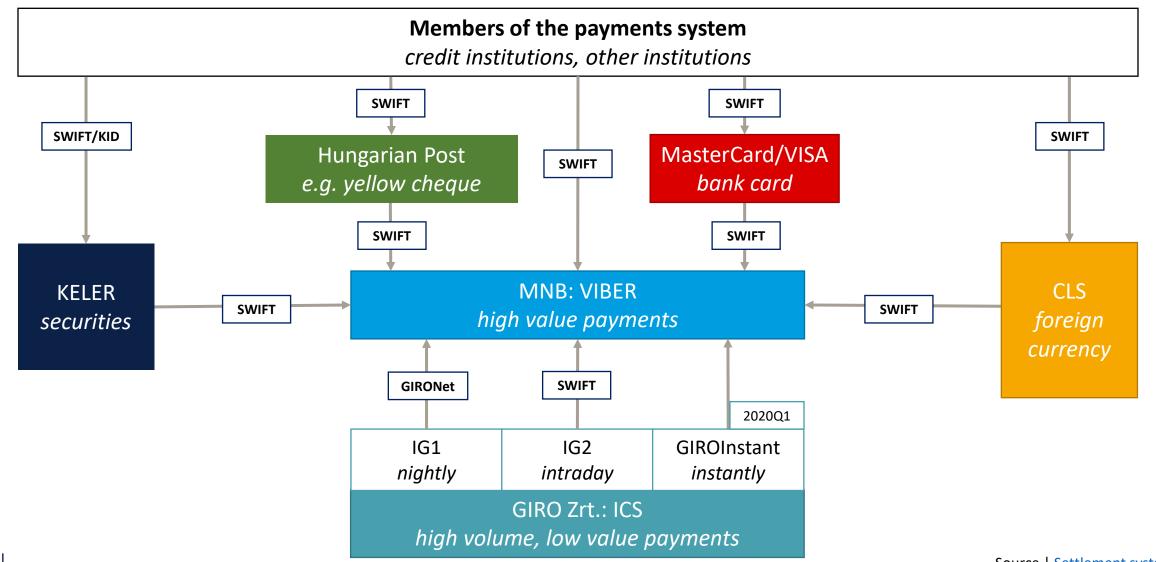


Different set of counterparties per instrument is possible depending on the purpose of the instruments

- For deposit quick tenders only credit institutions
- For mortgage bond purchase programmes, mortgage banks
- For Bond Funding For Growth Scheme (BFGS) the issuing companies

THE HUNGARIAN PAYMENT SYSTEM INFRASTRUCTURE





ELIGIBLE COLLATERALS FOR THE MNB



The MNB can only provide credit with adequate collateral

- Eligible securities: government bonds, covered bonds, eligible bonds (e.g. bank, corporate)
- Since 1 June 2020 the MNB also accepts Corporate receivables (details on slide 24)

Collateral Management

- Collateralised loan, not classical repo (securities repurchase agreement) is a form of central bank standing facility loan
- Consolidated collateral pool (one portfolio of securities for all traditional central bank loans)
- Application of haircut depends on the type and maturity of the collateral
- Daily evaluation, request for additional collateral if necessary

GREEN ASPECTS OF THE MNB'S MONETARY POLICY TOOLKIT





Following the Parliament's decision in May 2021, the MNB is one of the first in Europe that received an environmental sustainability mandate

The Green Monetary Policy Toolkit Strategy presents a coherent framework and possible directions for the integration of environmental considerations into the monetary policy toolkit



IMPLEMENTATION OF THE STRATEGY

FGS Green Home Programme

Buying or building new, energy-efficient homes

Green mortgage bond purchase programme

Indirect support for green mortgage lending

Greening Collateral Management

Green haircut (In case of green bond securities)







MONETARY POLICY INSTRUMENTS AND MONETARY POLICY STRATEGY



MONETARY POLICY INSTRUMENTS USED BETWEEN 2020 AND 2023 AS CRISIS MANAGEMENT TOOLS

PROMINENT ROLE OF THE MONETARY TRANSMISSION





THE MNB ENSURES THE APPROPRIATE TRANSMISSION EFFECT BY COMPLEMENTARY INSTRUMENTS



ı	NSTRUMENT	OBJECTIVE	ТҮРЕ	IMPACT
1 Reserve requi	irements*	Monetary policy implementation	Deposit instrument	Influencing short-term market rates
2 Interest co	rest corridor	Smoothing interbank interest rate fluctuations	Overnight (O/N) deposit	Limitation of excessive interest rate movements
			Overnight (O/N) collateralised loan	
3 FX-swap t	ender	Strengthening monetary policy	Foreign exchange swap	Acts as a floor for FX- swap market implied yields
4 Discoun	t bill	transmission	Bill (dematerialised security)	Broadening monetary transmission

^{*} As of 18 September 2018, the Monetary Council has decided that the central bank's policy instrument will be the required reserves.

1. REQUIRED RESERVE SYSTEM



Objective

- As main policy instrument it steers money market interest rates
- The central bank's primary sterilization tool

Form

- Credit institutions subject to reserve requirements have to hold their reserve requirements on their forint payment accounts with the MNB
- If the reserve holding is less than the reserve requirement, the credit institution has to pay sanction fee
- Credit institutions can **deposit their excess liquidity** on their payment accounts with the MNB **at central bank base rate**

Interest rate

- Central bank base rate
- The MNB pays the base rate on the interest-bearing part of the credit institutions' required reserve and on their excess reserves

REQUIRED RESERVE SYSTEM

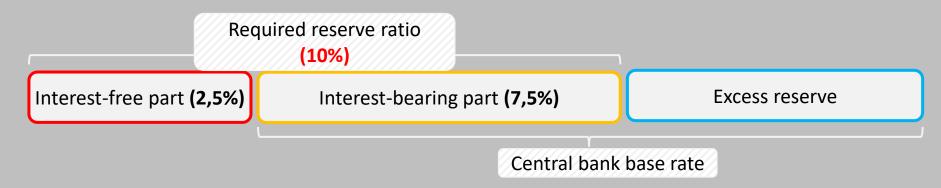


Required reserve base calculation:

- Resident credit institutions and domestic branches of foreign credit institutions have to hold required reserves based on a certain
 percent of their liabilities with an original maturity up to 2 years on their forint payment accounts with the MNB and have to fulfill their
 reserve requirements on daily and monthly basis
- The required reserve ratio is uniformly the 10 percent of the credit institutions' required reserve base
- Since the beginning of 2024 the required reserve base is determined based on the average stock of liabilities in the reference month

Required reserve system's interest payment:

- The 25 percent of the required reserve calculated by the 10 percent required reserve ratio operates without interest payment, the above this level the current central bank base rate has been payed for banks.
- Since October 2023 the MNB has also been paying the base rate for liquidity exceeding the required reserve (excess reserve).



Due to the operation of the required reserve system, the marginal interest level of the bank's excess liquidity is the base rate.

THE REQUIRED RESERVE SYSTEM HAS SEVERAL FUNCTIONS CONCERNING THE MNB'S POLICY TOOLKIT



Main policy instrument

- The minimum reserve system is the main policy instrument since 18 September 2018
- The MNB remunerates both required reserves and excess reserves at the base rate without a quantitative limit since October 2023, which guides short-term money market yields

Supporting banks in liquidity management

- The banking system manage liquidity shocks by building up the reserve account
- The MNB's macroprudential regulation considers both the minimum reserves and excess reserves as liquid assets fully eligible for inclusion in the LCR indicator
- Supporting the "Instant Payment System", banks can use IPS-related deposits to meet the required reserves

Liquidity sterilisation in the banking system

- The minimum reserve requirement system permanently ties up part of the liquidity in the banking system (Minimum level must be met on a daily basis)
- The excess reserve system is the MNB's main sterilisation tool, tying up most of the excess liquidity overnight

2. INTEREST RATE CORRIDOR AND OVERNIGHT RATES



Objective

 Determines the extent and – in case of an asymmetric rate corridor direction of fluctuations in money market interest rates

Form

- Rate corridor between the overnight lending and deposit facilities
- Simultaneous availability of assets and liabilities
 - The MNB provides unlimited liquidity with overnight credit against banks' collateral in the form of securities at the top of the interest rate corridor
 - The bottom of the interest rate corridor is the overnight (O/N) deposit rate, at which the MNB accepts unlimited amount of excess liquidity

Interest rate

- Symmetric or asymmetric around the reference rate
- Since October 2023 central bank base rate + / 100 basispoints

3. FX-SWAP TENDERS



Objective

- Strengthening monetary transmission
- Short-term interest rates in all submarkets especially the swap market and at all times should be in line with the short-term interest rate considered optimal by the Monetary council

Form

- Foreign exchange swap providing euro liquidity for one-day maturity (T/N), available on daily tenders for regular counterparties
- Tenders with longer-term mauturities on ad-hoc basis
- Announced with or without quantitative limits

Interest rate

- Priced at the lower end of the interest rate corridor
- Sets a lower bound on the market implied forint rates for short FX-swaps

The instrument supports the monetary transmission on the FX-swap market particularly during end of quarter periods.

THE ROLE OF FX-SWAP INSTRUMENT IN THE MONETARY TRANSMISSION



Exchange rate channel

• Foreign exchange market conditions are affected by implied yields

Foreign investors

• A liquid market, which is highly relevant for foreign investors in several aspects

Liquidity management

The FX swap market is important for domestic banks to manage liquidity

Speculative positions

In short maturities, the cost/return of speculation in the forint market is determined by the swap market interest rate

Hedging instrument

Longer maturity transactions are typically used by foreigners to hedge exchange rate risk of forint assets

Foreign trade

Impact on the conditions of hedging foreign exchange needs of real economic agents

4. DISCOUNT BILL



Objective

- Broadening monetary transmission
- Absorbing interbank forint liquidity on a longer term
- Indirect channel to ease market tensions on FX markets

Form

- The Discount Bill is a tradeable, one-week, dematerialised debt security denominated in Hungarian forint
- Available at weekly auctions

Interest rate

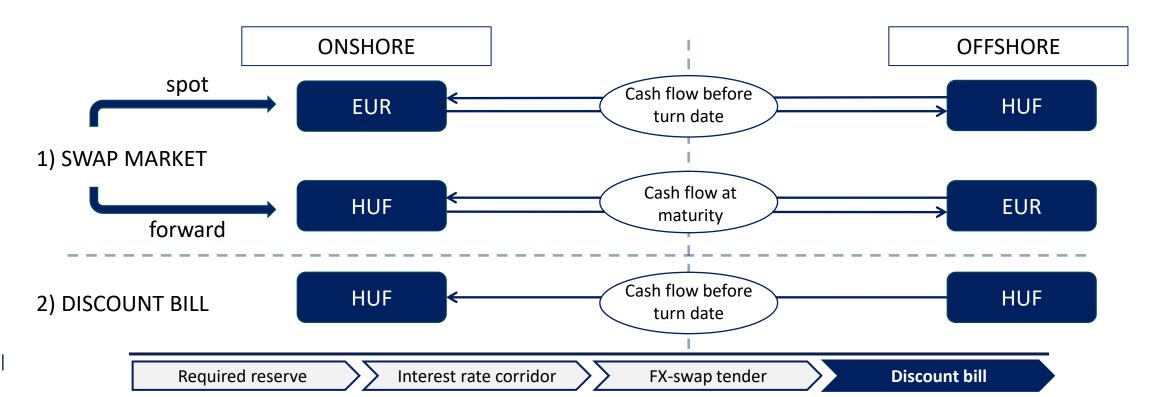
- The Discount Bill is a non-interest-bearing instrument sold at a discount
- The MNB uses the prevailing base rate to set the issue price

The instrument can ease tensions on the FX swap market that has a particular relevance on end-of-quarter periods

THE IMPACT OF THE DISCOUNT BILL ON THE FX SWAP MARKET



- On turn dates that is important from regulatory or balance sheet perspectives (e.g. at the end of quarters), foreign market participants typically reduce their on-balance sheet exposure to Hungarian banks
- If this happens on the FX swap market, i.e. the foreign bank temporarily exchanges its forint exposure to foreign currency (1.), a concentrated and large amount of forint supply and foreign currency demand may appear, which may result in a decrease in implied forint interest yields
- Tensions on the FX swap market are eased if foreign market participants temporarily invest their forint liquidity in central bank discount bonds (2.) instead of in the FX swap market.



COLLATERALS ACCEPTED BY THE MNB



The MNB can grant credit only against appropriate collateral. Appropriate collateral types are provided in Section II of the MNB Business Terms and Conditions, listed here.

Securities

- 1.) The range of securities accepted as collateral and other rules are set out in the Terms and Conditions II. 6.1-6.5.
- 2.) The MNB applies various haircuts to the securities accepted as collateral, in order to manage market risk.
- 3.) The relevant "haircut matrix" can be found in the Annex 5 of the Terms and Conditions.

Corporate receivables

- 1.) Loans to corporates are considered acceptable collateral in case they comply with the II. 6.6. of Terms and Conditions.
- 2.) The haircut of each transaction is determined regarding the term, credit quality and currency.

Key features of loans:

- Outstanding of min HUF 1 billion;
- any currency, maturity

Variable rate deposit

- 1.) The amount placed in the variable rate deposit with a variable interest rate is pledged by the Counterparty to the MNB, which is therefore considered acceptable collateral.
- 2.) The MNB does not apply a haircut in relation to the variable rate deposit.

It was phased out after January 31, 2024





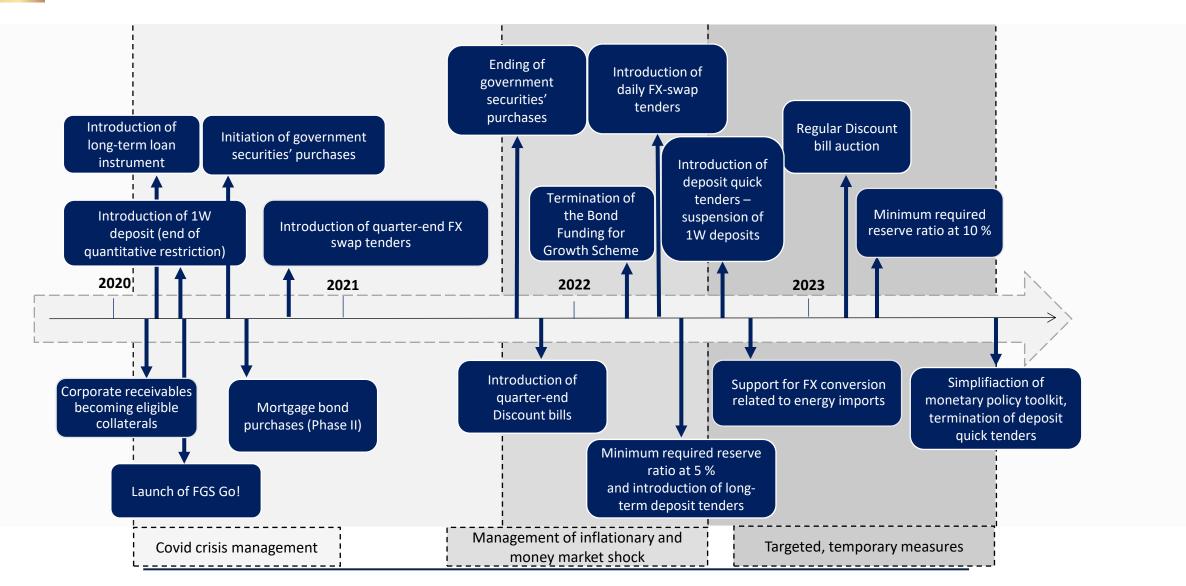
MONETARY POLICY INSTRUMENTS AND MONETARY POLICY STRATEGY



MONETARY POLICY INSTRUMENTS USED BETWEEN 2020 AND 2023 AS CRISIS MANAGEMENT TOOLS

THE MOST IMPORTANT STEPS IMPACTING THE MONETARY POLICY TOOLKIT (2020-2023)





THE MNB SUPPORTED THE COVID CRISIS MANAGEMENT WITH SEVERAL INSTRUMENTS



In mid-March 2020, the financial market turbulence caused by the coronavirus epidemic already had an impact on the domestic financial markets. In order to mitigate the negative financial market and real economic consequences, the Magyar Nemzeti Bank decided to modify its monetary policy toolkit.

Ensuring liquidity

- Expansion of eligible collaterals
- Expanding the group of Counterparties with investment funds
- Long-term loan instruments
- Suspension of the sanction for holding less reserve than required

Monetary policy objectives

More flexible short yields

- Activation of 1W deposit
- Making interest rate corridor symmetrical

Introduction of instruments affecting long-term yields

- Introduction of FGS Go!
- ➤ Easing of Bond Funding for Growth Scheme's conditions
- ➤ Long-term loan instruments
- Purchase of government securities
- Mortgage bond purchase

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CENTRAL BANK MEASURES ASSIGNED TO ENSURE LIQUIDITY



In order to ensure long-term interbank liquidity, the MNB decided to expand the group of eligible collaterals in several phases

- By extending the group of eligible collaterals to the domestic corporate forint and foreign currency loan stocks, it increased the potentially available liquidity by about HUF 2,600 billion;
- The MNB expanded the definition of corporate receivables to receivables contracted under Hungarian law with an
 outstanding capital debt of over HUF 1 billion, following this step, the range of eligible collaterals was thus extended by
 an additional HUF 800 billion.

The MNB decided on the targeted expansion of the group of central bank Counterparties to investment funds

- Investment funds can access longer-term covered loans indirectly, through the mediation of Counterparties, or directly, by pledging their own collaterals to the MNB;
- Public and open-ended securities funds managed by the 10 largest investment fund managers could also participate in the Bond Funding for Growth Scheme and in purchases of government securities.

The MNB introduced a collateralised loan instrument with a term of up to 5 years

• The collateralised loan instrument was introduced with terms of 3-6-12 months and 3 and 5 years.

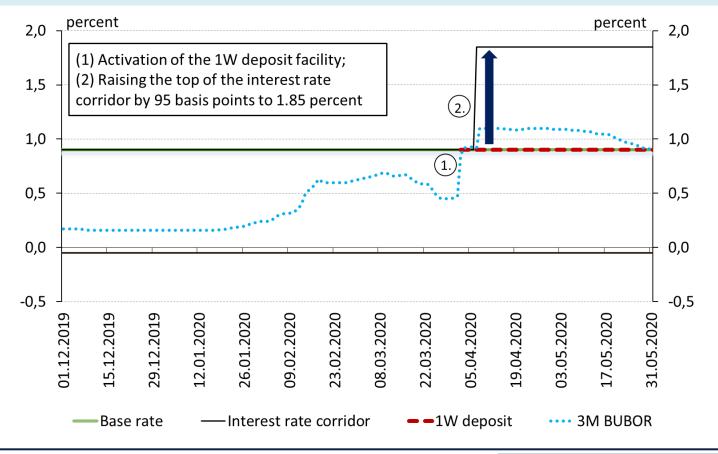
The MNB granted exemption from the legal consequences of non-fulfillment of the reserve requirement

• By the introduction of this measure, the freely available liquidity of the banking system increased by nearly HUF 250 billion (from the reserve period of March 2020 until the reserve period of September 2020).

THE MARKET UNCERTAINTY JUSTIFIED THE REVIEW OF THE OPERATIVE FRAMEWORK AFFECTING SHORT YIELDS



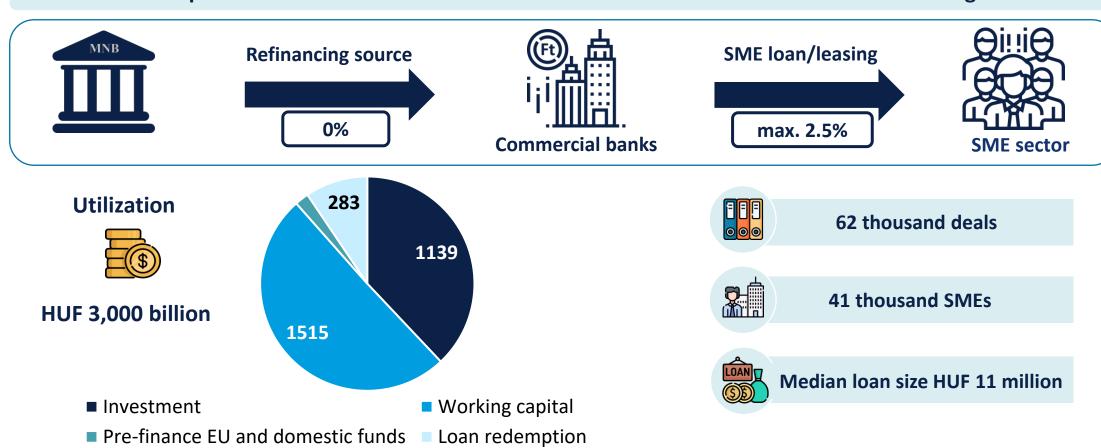
- (1) On April 1, 2020, the MNB activated its one-week deposit facility, which became one of the banks' main sterilization tools, thus gaining a prominent role in monetary transmission.
- (2) On April 7, 2020, the Monetary Council decided to make the interest rate corridor symmetrical, which provides flexibility for the realization of monetary transmission on short maturities.



THE FGS GO! WAS ONE OF THE MOST SIGNIFICANT INSTRUMENTS OF CRISIS MANAGEMENT IN 2020-2021



The FGS Go! provided funds to the SME sector with a favorable interest rate and a wide range of uses



DISTRIBUTION OF CREDIT GOALS IN THE FGS GO!

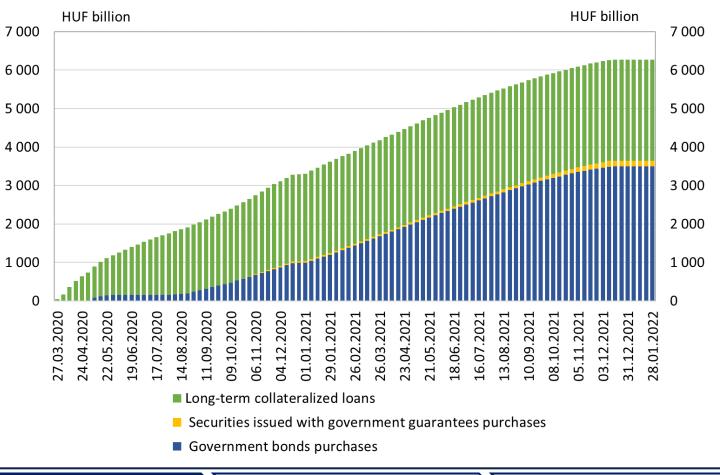
Note: the unit of measure of the labels is HUF billion.

Covid crisis management

ASSET PURCHASE PROGRAMS ALSO SUPPORTED EFFICIENT MONETARY TRANSMISSION ON LONGER MATURITIES



- The MNB bought government securities and state-guaranteed bonds in an amount about HUF 3,600 billion in 2020 and 2021
- A total of more than HUF 2,600 billion went to the banking system in 2020-2021 through the long-term collateralised loan tenders, which ensured the long-term liquidity needs of the banking system and supported the government securities market

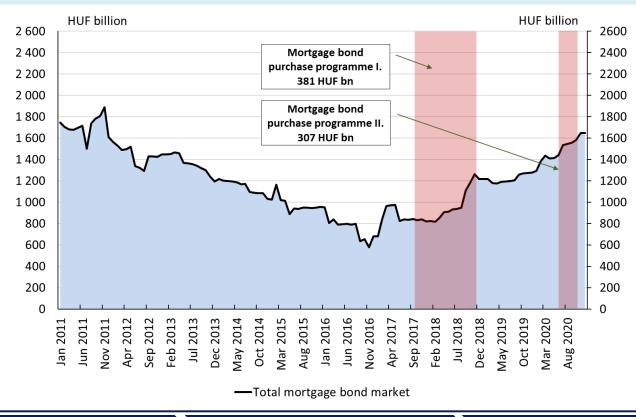


THROUGH MORTGAGE BOND PURCHASES, THE CENTRAL BANK ALSO TARGETEDLY STIMULATED THE RETAIL MORTGAGE LOAN MARKET



The MNB with its mortgage bond purchase programs:

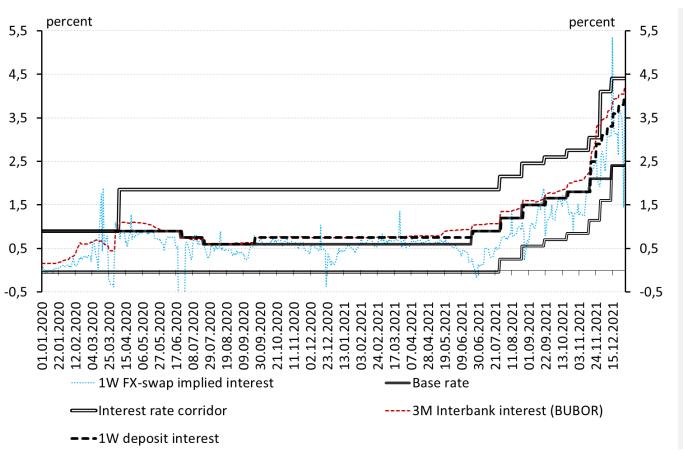
- revitalized the mortgage bond market, supporting the rise of mortgage lending with longer fixed interest rates (2018) It provided quick help in the coronavirus crisis managament (2020)
 - Primary and secondary market purchases
 - Supported the issuance of 5 mortgage bond series
 - > The liquidity position of domestic banks improved



THE MNB WAS THE FIRST TO START MONETARY TIGHTENING AMONG REGIONAL CENTRAL BANKS



• The one-week deposit instrument introduced during the coronavirus crisis efficiently supported the monetary transmission

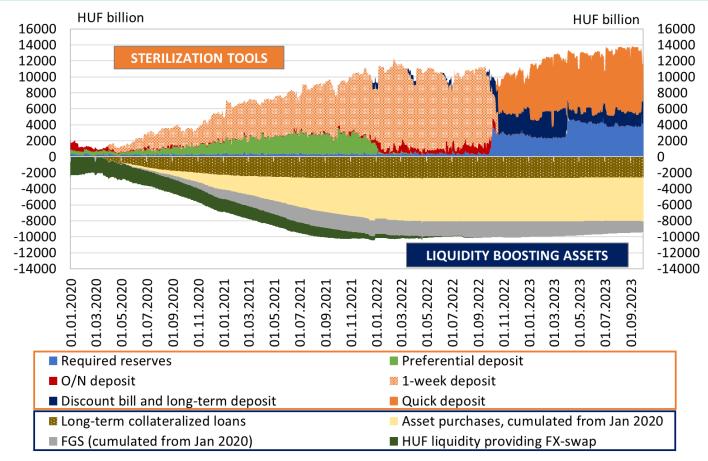


- Following the successful recovery from the crisis, the central bank gradually tightened the monetary conditions.
- The monetary tightening was implemented through the increase of the base rate and of the 1W deposit instrument's interest rate.
- In addition to the tightening cycle with the base rate, the task of the central bank's toolkit was to strengthen the transmission, to which the FX swap tenders held on a daily basis from July 2022 also contributed.

ONE OF THE CONSEQUENCES OF THE SUCCESSFUL CORONAVIRUS CRISIS MANAGEMENT WAS THE SIGNIFICANT LIQUIDITY EXPANSION



From October 2022, banking system liquidity was sterilized through several central bank instruments



Note: In addition to central bank programs, the development of bank liquidity is also influenced by a number of other autonomous factors (e.g. the development of currency in circulation, treasury transactions).

FOR THE TIGHTENING MONETARY POLICY, IT BECAME NECESSARY TO PERMANENTLY TIE UP THE BANKING SYSTEM LIQUIDITY INCREASED BY THE CRISIS MANAGEMENT



"Based on the decision of the MNB's Monetary Council, from October 1, 2022, in order to strengthen the efficiency of monetary transmission and permanently tie up the banking system liquidity…"

The required reserve ratio increased from 1 percent to a minimum of 5 percent.

The *long-term* variable-rate *deposit facility* was introduced.

The regular *discount bill* auctions have started.

3.

2.

THE MNB TIED UP A PART OF THE INCREASED LIQUIDITY IN THE REQUIRED RESERVE



From October 2022, the required reserve ratio increased to 5 percent from the previous 1 percent

- Introduction of an optional reserve ratio (maximum 10 percent)
- In the case of the 5 percent minimum reserve ratio, mandatory daily compliance is required

From April 2023, the minimum required reserve ratio increased to 10 percent

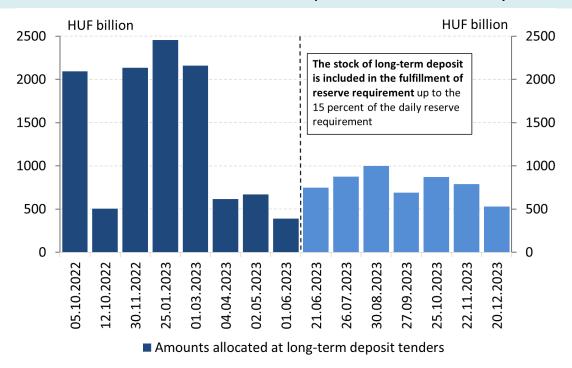
- In accordance, the maximum optional reserve ratio has increased to 15 percent
- In order to restrain the increase of liquidity, the interest on the required reserve has been changed to zero for 2,5 percent of the reserve base

As part of the simplification of the MNB's toolkit starting in the fall of 2023, the optional part has been abolished from the beginning of 2024, thus a uniform 10 percent required reserve ratio applies to all credit institutions

THE VARIABLE-RATE DEPOSIT FACILITY WITH A TERM OF UP TO 6 MONTHS SUPPORTED THE LONG-TERM STERILIZATION OF LIQUIDITY



- By the long-term deposit facility, the MNB ensured sterilization of the banking system's excess liquidity, strengthening monetary transmission
- From July 2023, a maximum of 15 percent of the daily reserve requirement could be fulfilled by the liquidity in the long-term deposit facility
- Along with the simplification of the central bank's toolkit, it was phased out on January 31, 2024



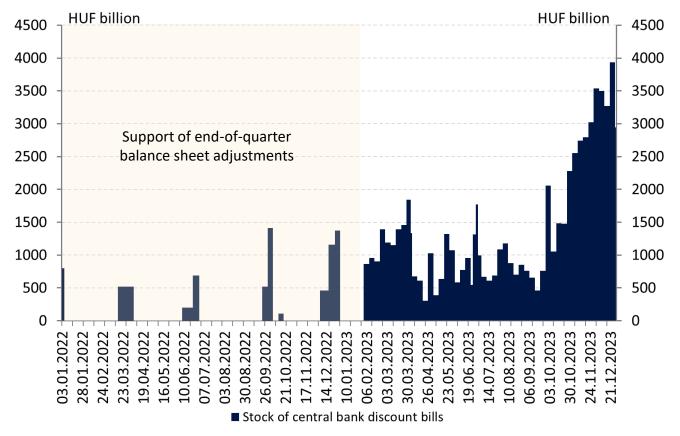
Note: a certain part of the liquidity tied up as a result of the June 21, 2023 tender was included in reserve requirement calculation for the month of July 2023

THE CENTRAL BANK DISCOUNT BILL HAS BECOME AN IMPORTANT ELEMENT OF STERILIZATION



- The instrument was introduced in January 2022 and from February 2023 it supported the sterilization of interbank liquidity on a weekly basis
- By the end of 2023, its average monthly utilization had risen to over HUF 3,000 billion

Covid crisis management

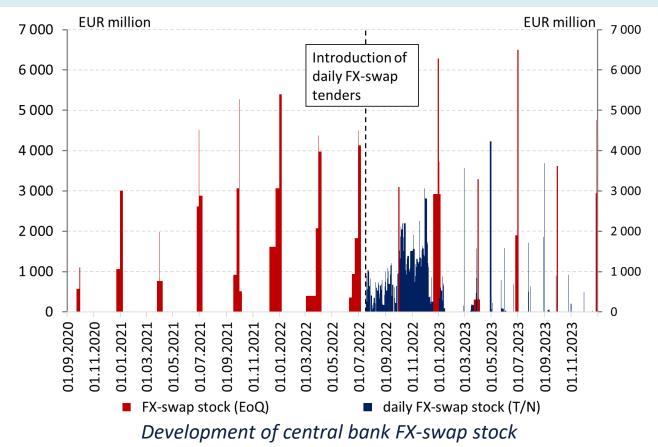


*Note: 89/2023. (III. 22.) Government decree on economic, financing-related measures, according to which non-bank actors may not buy discount bill from mid-March 2023

BY ITS ACTIVE PRESENCE THE MNB STRENGTHENS THE EFFICIENCY OF MONETARY TRANSMISSION ON THE FX SWAP MARKET



- In addition to the end-of quarter FX swap tenders providing euro liquidity used from autumn of 2020 the MNB has held daily T/N FX swap tenders since July 2022;
- The aim of the active swap market presence is to strengthen the efficiency of monetary transmission and to maintain market stability in the key FX swap market through the support of bank balance sheet adjustment



Covid crisis management

IN OCTOBER 2022, THE MNB RESPONDED TO FINANCIAL MARKET TENSIONS WITH TARGETED MEASURES



The deteriorating of international environment amd the emerging energy market shock resulted in a critical increase of risk aversion

In the turbulent financial market situation, to achieve the primary goal of price stability, ensuring financial market stability has become extremely important

Factors of the strengthening of risk aversion:

I. Build-up of speculative positions against HUF assets

Interest rate sensitive

Covid crisis management

II. Foreign exchange conversion for disbursements, mainly related to payment of energy bill

Interest rate insensitive

BY ITS TARGETED MEASURES, THE MNB PROVIDED A QUICK AND EFFICIENT RESPONSE TO BOTH FACTORS



I. Interest rate sensitive developments: Managing the jump of risk premium A significant increase in short-term yields with targeted, temporary measures

New instrument

Overnight (O/N) deposit quick tender on a daily basis

with an 18 percent interest rate

Modified parameters

Tomnext (T/N) swap instrument providing foreign exchange liquidity

with a 17 percent interest rate

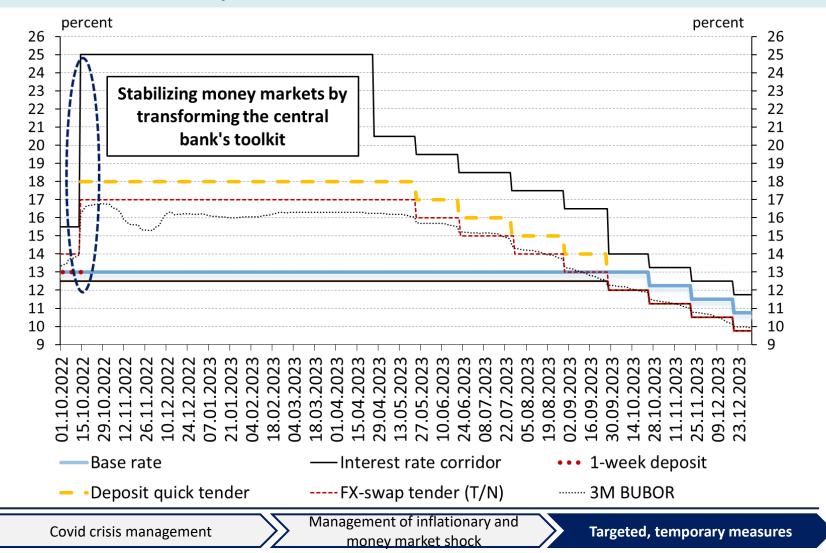
II. Interest insensitive developments:

- Managing the exchange rate effect of the energy market was realized by meet a more significant, concentrated need for foreign exchange liquidity to cover energy imports;
- The MNB concluded conditional EUR/HUF spot and EUR/HUF forward foreign exchange transactions from November 2022 to the end of March 2023 in order to meet the foreign exchange financing needs related to net energy imports

BY ITS TARGETED MEASURES, THE MNB ENSURED STRICT MONETARY CONDITIONS IN MONEY MARKET RATES



 By widening the interest rate corridor and raising the interest rate on collateralized ON loan facility to 25 percent, the MNB has provided sufficient room for possible further interest rate moves



IN APRIL 2023, BY THE STABILIZATION OF THE INTERNATIONAL ENVIRONMENT, THE NORMALIZATION OF MONETARY CONDITIONS COULD BEGIN



In April 2023, as a first step, the Monetary Council reduced the upper edge of the interest rate corridor from 25 to 20.5 percent By the improvement of the emerging markets' perception, the mitigation of the European energy crisis risk, and the significant and trend-like improvement of Hungary's current account balance, there was an opportunity for the gradual and cautious normalization of monetary conditions

In September 2023, the Monetary Council decided on the following:

- > Closing the gap between the interest rates on the overnight quick deposit tender and the base rate
- The interest rate on excess reserve has become the base rate
- > The interest rate of the central bank discount bill and the long-term deposit instrument has been adjusted to the base rate
- > The MNB pays uniformly the base rate on the reserve accounts for the entire interest-bearing amount

Simplification of MNB's toolkit

- Phasing out of deposit quick tender
 - Termination of optional reserve ratio from January 2024 in relation to required reserve

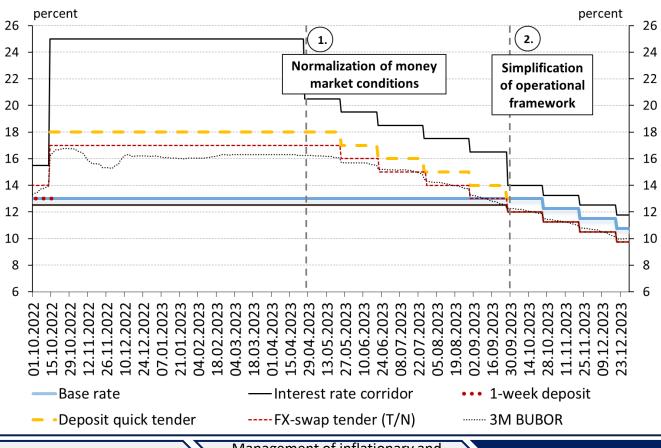
Normalization of the framework

- The reserve account is the main sterilization tool
- The base rate is the guiding interest rate in case of pricing money market transactions

CHANGES IN THE PRICING OF MONEY MARKET INSTRUMENTS DURING THE NORMALIZATION PERIOD



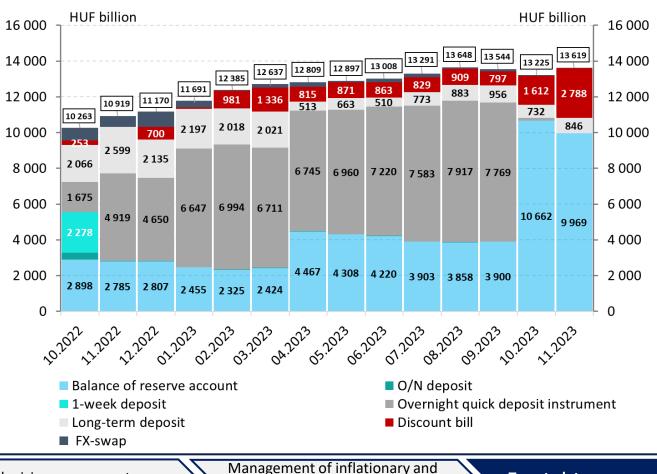
- I) The normalization of the central bank's toolkit began with the gradual reduction of the upper edge of the interest rate corridor and the interest rate of the deposit quick tender and swap instrument
- 2) According to the decision of the Monetary Council in September 2023, the overnight quick deposit tender instrument's interest rate has become equal with the base rate, which provided an opportunity to transform the operational framework



THE MONTHLY AVERAGE USE OF MNB'S INSTRUMENTS GRADUALLY RISED DUE TO THE BANKING SYSTEM LIQUIDITY INCREASE

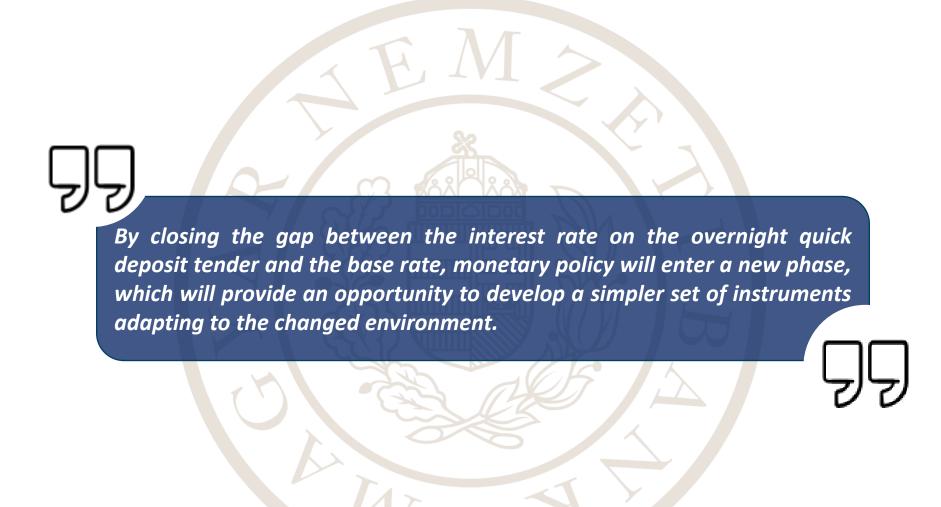


- 1) Autonomous factors affecting liquidity: (1) fiscal developments (Treasury Single Account), (2) cash in circulation.
- Since October 2022, the central bank's main sterilization tool has become the deposit quick tender, and from October 2023, the majority of banking system liquidity was placed in the reserve account



FROM OCTOBER 2023, THE MNB'S TOOLKIT HAS BEEN SIMPLIFIED





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DIRECTORATE MONETARY POLICY INSTRUMENTS, FOREIGN EXCHANGE RESERVES AND RISK MANAGEMENT

jdktit@mnb.hu