The monetary policy instruments of the Magyar Nemzeti Bank

MNB, Directorate Monetary Policy Instruments, Foreign Exchange Reserves, And Risk Management

20 February 2020

TOPICS

- Role of monetary policy instruments in the inflation targeting regime
- Monetary policy instruments from January 2019
- Modification of monetary policy instruments in the 2013-2018 period
- Determinants of interbank liquidity, shocks hitting the liquidity of the banking system and their management

Objectives of monetary policy

Primary objective

- To achieve price stability - keeping inflation low through the conduct of predictable and credible monetary policy

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

- Strategy: inflation targeting – announcement of a numerical explicit medium-term inflation target

Intermediate target

- inflation forecast to be close to the inflation target
- the medium-term target of the MNB: 3% (consumer price index) +/- 1% (tolerance band)

  https://www.mnb.hu/en/publications/reports/inflation-report

Direct, operational target

- Short-term market interest rates to be consistent with the central bank base rate and with the expectations of it
- short term: 3-6 months

Monetary policy framework of the MNB

Key policy instrument:

Minimum reserves

Operational target:

Short-term interest rates= expected base rate

Intermediate target:

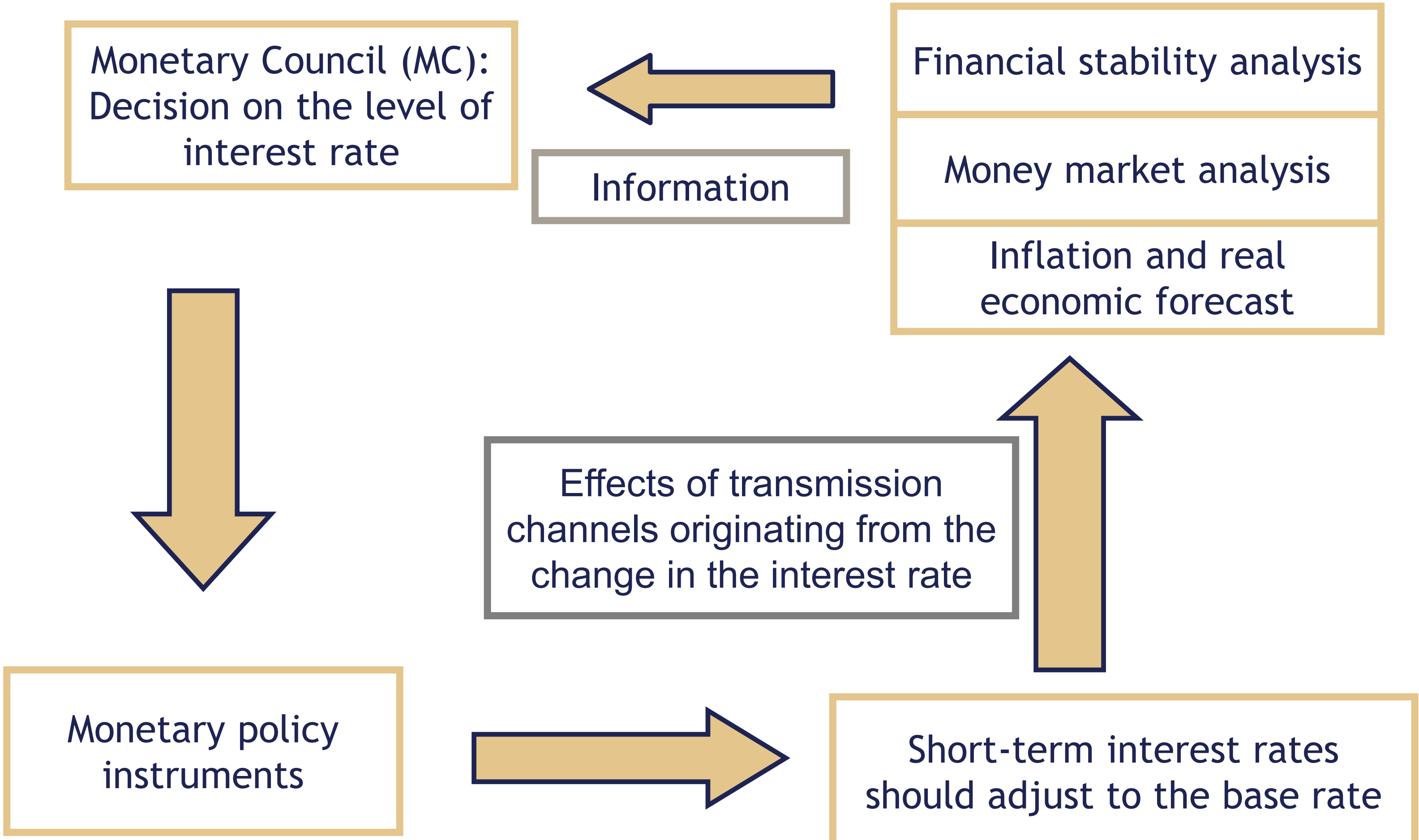
Inflation forecast=

= medium-term inflation target

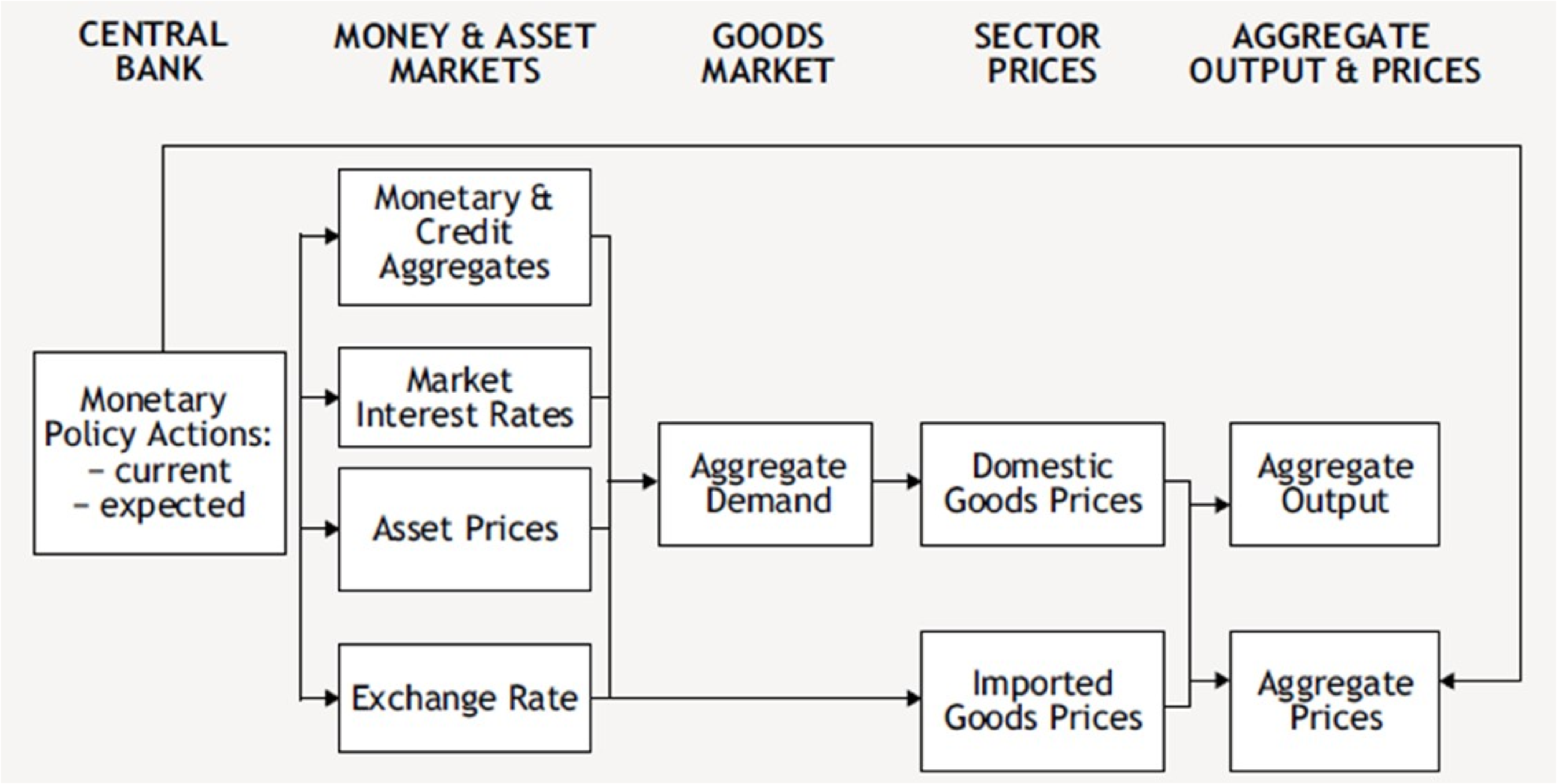
Primary goal:

Price stability

Decision-making mechanism of the MNB



Transmission channels: the way monetary policy decisions affect output and inflation



Announcements by the central bank influence economic agents' expectations too.

Source: Monetary policy in Hungary (2012)

Monetary policy instruments and the MNB’s objectives

Set of monetary policy instruments: the whole range of the forint and foreign currency operations of the central bank.

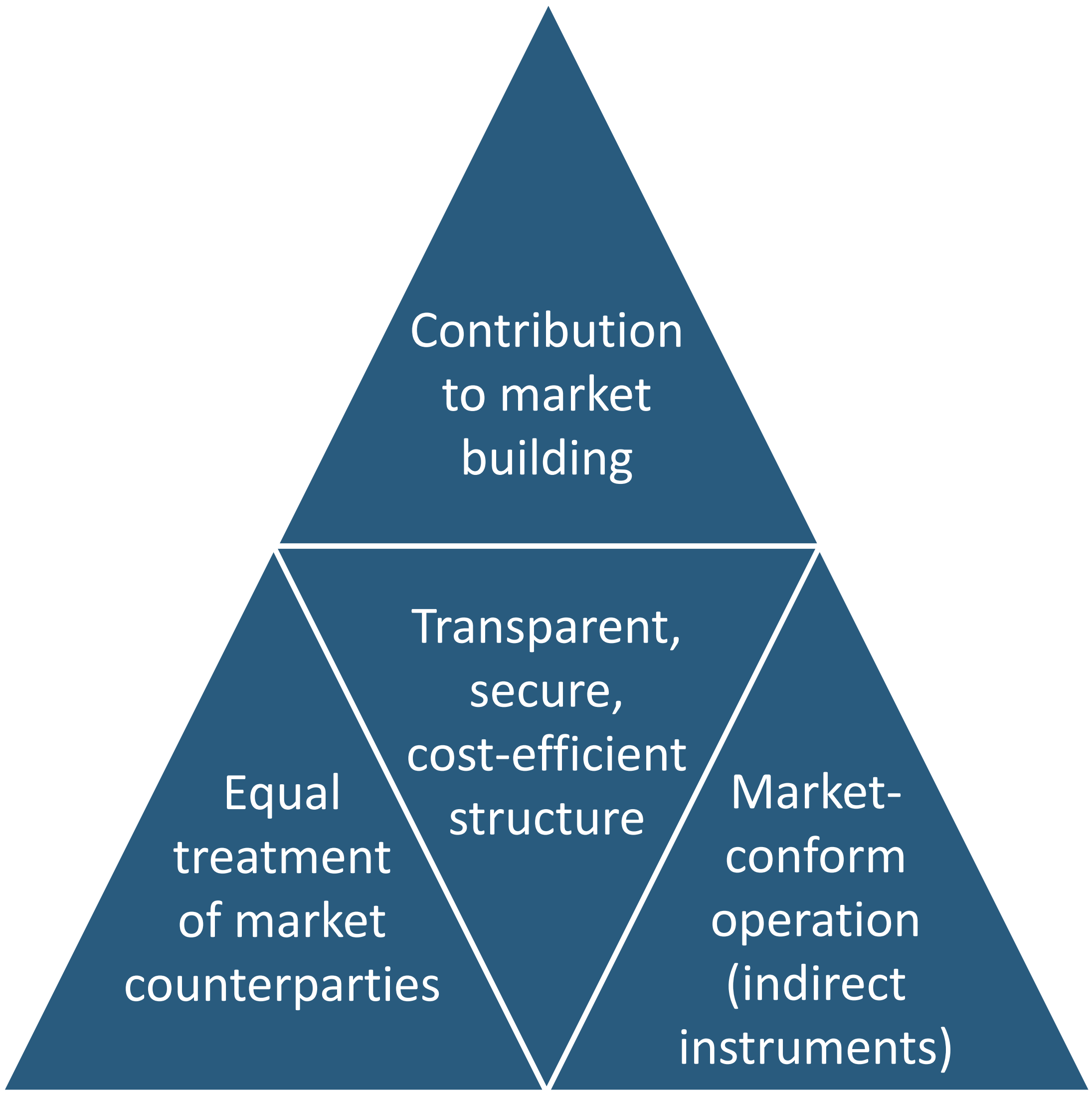
The primary objective of the central bank shall be to achieve and maintain price stability, which is provided by the following provisions:

- to implement an effective transmission of central bank interest rates,
- to assist banks’ liquidity management,
- to contribute to financial stability,

Beyond the above mentioned aspects without risking it’s primary objective the MNB:

- supports the maintenance of the stability of the financial intermeditation system, endeavours to improve the effectiveness of the financial intermediary operations and to enchance competition in money market
- supports the government’s economic policy with the available instruments thereby contributing to sustainable economic growth.

Principles of the monetary policy instruments



Counterparties of the MNB

Counterparties: all domestic credit institutions subject to reserve requirements if they meet the appropriate technical requirements:

- they are direct members of the Hungarian real-time gross settlement system (VIBER) or of the Interbank Clearing System (BKR),
- in the case of collateralised loans and securities transactions they have a securities account with central securities depository and security settlement system (KELER)

In line with the objectives of the various instruments (e. g. in case of instruments aimed at quick intervention) counterparties may be different:

- In case of particular FX instruments non-residents also involved
- In case of quick tenders only banks
- In case of mortgage bond purchase program (2018) only mortgage banks

Eligible collaterals

Central bank credit can only be **granted against collateral** under normal circumstances.

Eligible securities: government securities, mortgage bonds, bonds with adequate rating (of banks, companies) – Collateral valuation – Historical prices

Collateral management in practice (Description of the Central Bank's Collateral Management System):

- Collateralised loan and not classical repo (securities repurchase agreement) facility
- Pooling (one single securities portfolio for all traditional central bank loans)
- Haircut (deduction) dependent on the type and maturity of collateral
  Risk Management Parameters Applied to Eligible Collaterals Accepted by the MNB (effective from July 1, 2019)
- Daily revaluation, call for additional collateral if necessary

Simplified central bank balance sheet and instruments

Assets	Liabilities
Foreign-exchange reserves	Cash
FGS-loan	Single Treasy Account
Forint mortgage bonds	Minimum reserves
O/N loan	O/N deposit
Other central bank loans (1-week collateralised loan)	Other central bank deposits (Preferential deposit)
Other assets	Other liabilities

Off-balance sheet items

Foreign-exchange swaps (FX-swap)

Interest rate swaps (IRS)

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The frame of central bank instruments affecting short-term yields

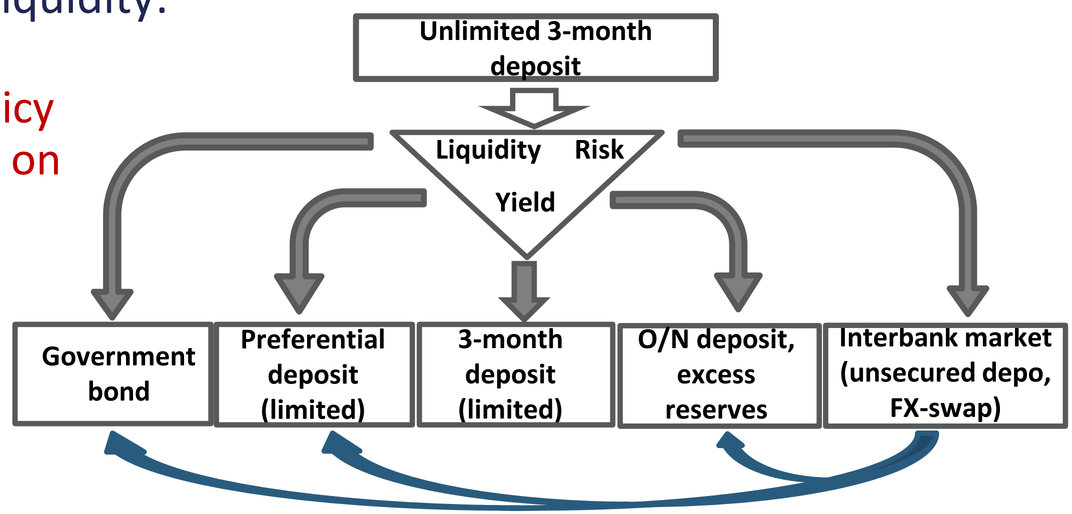
Main elements of the MNB's monetary policy instruments					
Quantitative restriction	Interest rate corridor	Central bank FX-swap instrument	Minimum reserves	Preferential deposit	Loan tenders

Quantitative restriction

- *Form:* Between October 2016 and September 2018 the key policy instrument of the MNB (3-month deposit) was available for banks in a limited amount
- *Objective:* direct liquidity for encouraging lending, support of self-financing and decrease relevant market yields without change of key interest rate
- Schematic illustration of directing liquidity:

The liquidity crowded out from key policy instrument had a **yield-reducing effect** on all relevant markets.

Quantitative restriction - under the stability of key interest rate – **looses monetary conditions**.



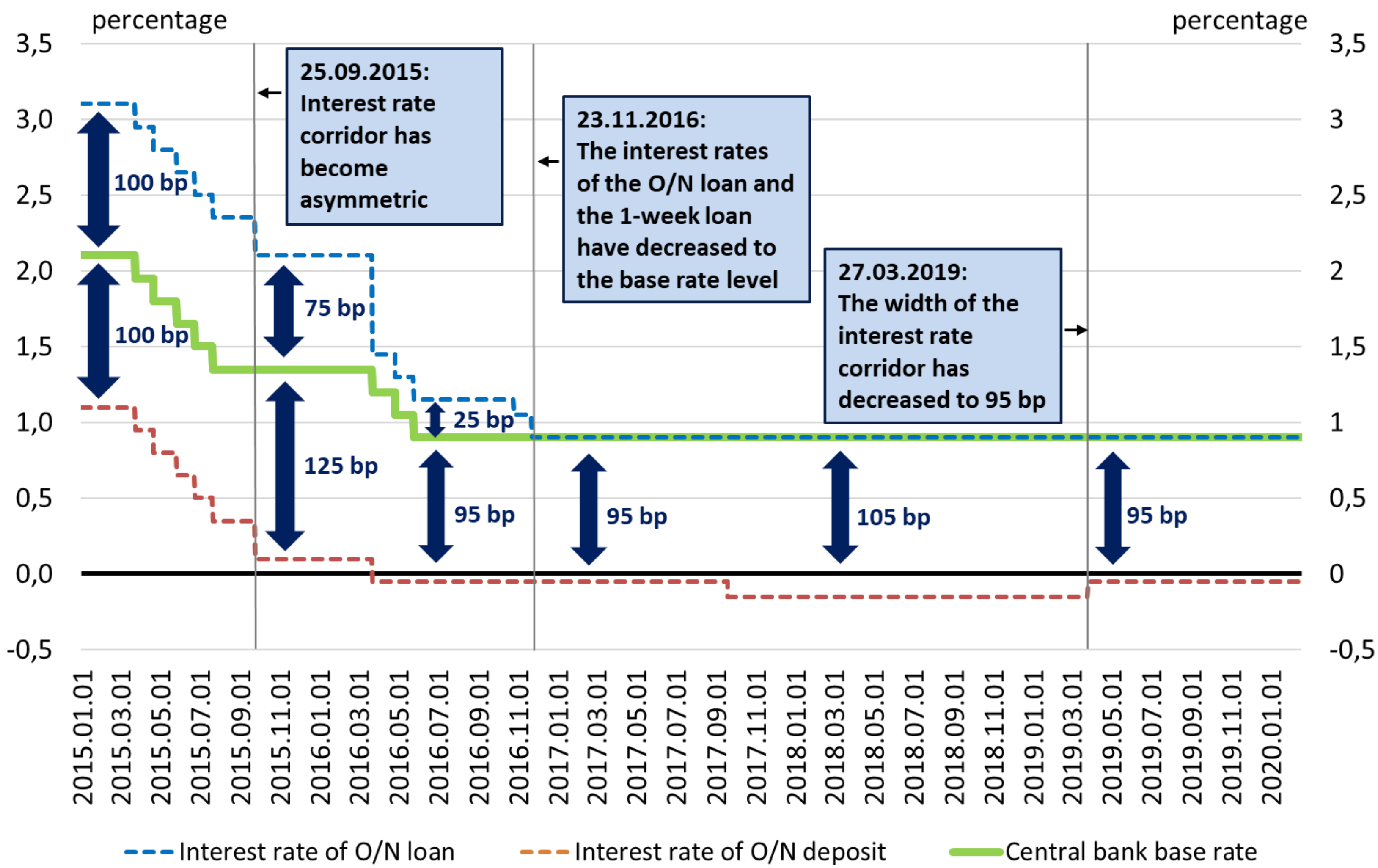
In the quantitative restriction system the MNB determines quarterly the edge values of the band of liquidity crowded-out. The MNB manages liquidity shocks by fine-tuning instruments.

Modification of the terms of the three-month policy instrument

Interest rate corridor and the overnight interest rates

- *Form:* Currently asymmetric corridor between the interest rates on central bank overnight (O/N) lending and deposit facilities
- Simultaneous central bank standing facilities on the assets and liabilities side
- *Objective:* to moderate the volatility of money market interest rates with small deviations from the key policy rate
  - On the top of the corridor the MNB provides unlimited liquidity for banks by ***the overnight lending facility (O/N loan)*** **against security collateral** restricting the rise of interbank interest rates.
  - On the bottom of the corridor the MNB accept unlimitedly temporary liquidity surplus from the money market by ***the overnight deposit facility (O/N deposit)*** restricting the fall of interbank interest rates under the O/N deposit rate.
- In the (uncovered) interbank market overnight rates fluctuate between the two edges of the interest rate corridor

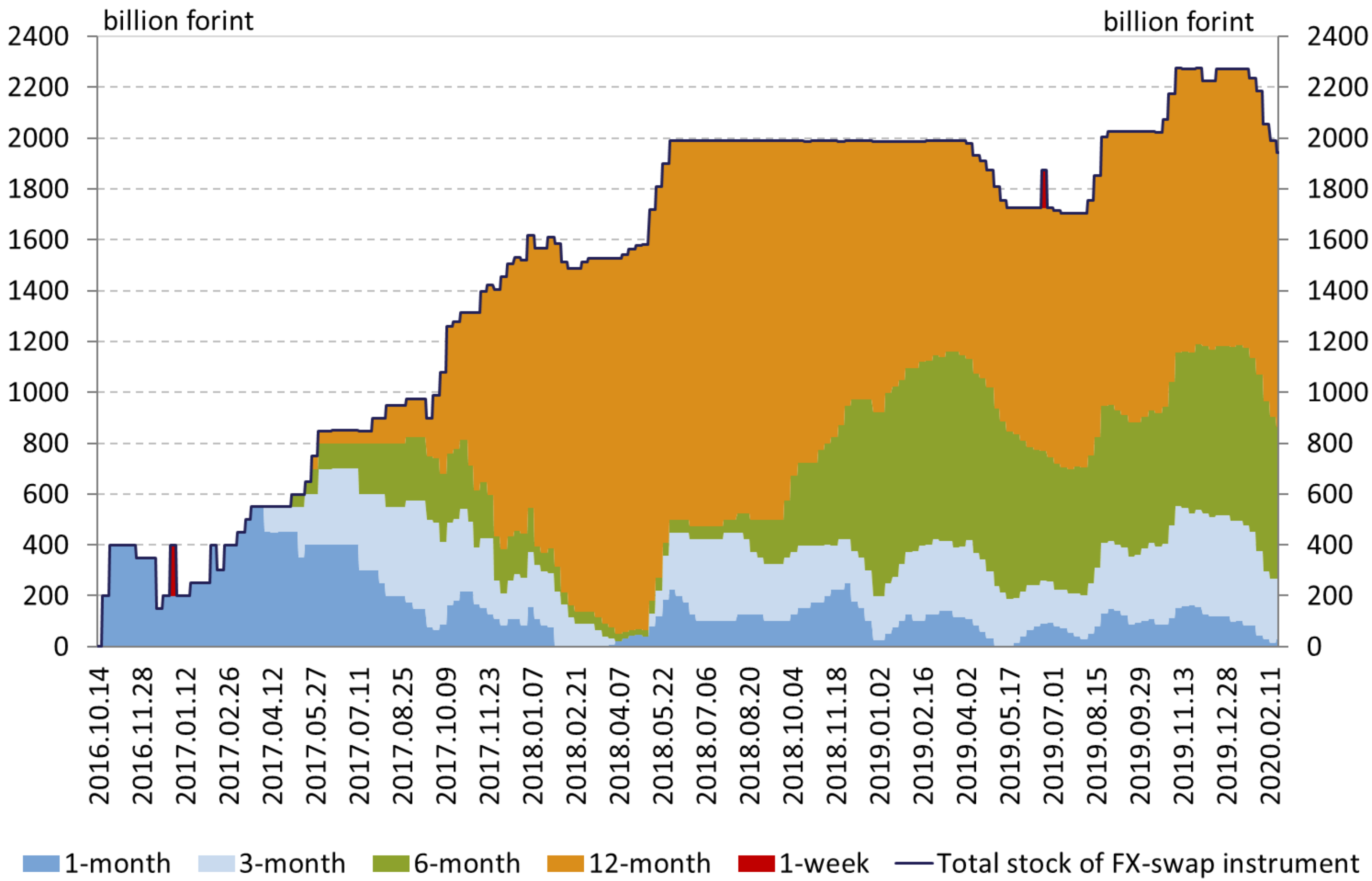
Modifications of the interest rate corridor (2015-2020)



FX-swap instruments providing forint liquidity

- *Form:* EUR-HUF FX-swap instruments providing forint liquidity with 1-week, 1-month, 3-month, 6-month and 12-month maturities
- *Objective:* neutralisation of liquidity flows obstructing the achieving of the crowding-out effect
- At the autumn of 2016, simoultaneously with the implementation of the quantitative restriction system the **short-term fine-tuning FX-swap instruments** have been introduced
- Since the spring of 2017 the 6-month and 12-month maturities have become available
- The MNB can manage the enduring and significant shifts of liquidity path by fine-tuning instruments providing the effectivity of the quantitative restriction.
- At the autumn of 2016 beyond the FX-swap instruments providing forint liquidity the MNB created the **1-week central bank deposit instrument** applied on an ad hoc basis in order to absorb excessively high liquidity surplus (the MNB didn't use it between 2016 and 2019).

The development of the FX-swap stock of the MNB until 20.02.2020



The role of minimum reserve requirements

- *Form*: Banks are required to maintain reserves against a part of their liabilities (2% of the liability items subject to reserve requirements with a maturity less than 2 years) in their settlement accounts with the central bank
- *Objective*: to moderate the volatility of money market interest rates
- Averaging mechanism: reserve requirements have to be met on a monthly average basis*
- The MNB pays the **central bank base rate** on the minimum reserves. Banks have to pay a **penalty interest rate equal with the central bank base rate** if they **hold less minimum reserves than required**. In case of **excess reserves holding** banks have to pay a **penalty interest rate (either the O/N deposit minus 0,15% or 0%, which one is lower)** on the amount above the minimum reserves.
- Since 1st December 2016 the minimum reserves rate has decreased from 2% to 1%:
  - Support the quantitative restriction of the 3-month deposit by increasing the liquidity of the banking system
  - Harmonization to the practice of the European Central Bank
- Since 19th December 2018 **the minimum reserves** has become **the key monetary policy instrument**

**Banks can maintain their required reserve account balance lower in case of temporary liquidity deficit or higher in case of temporary liquidity surplus*

The reform of the BUBOR-market

- Since May 2016 the MNB has transformed the BUBOR's quotation system in order to increase the reliability and information content of BUBOR's quotations. Therefore:

  - **A dealing obligation-based quotation system** has been created to strengthen the reliability of quoted interest rates and increase the role of market-based transactions;
  - The BUBOR has become able to fulfill better the role of **reference rate**, quotations have become less „sticky" to the central bank base rate.

- The system started from 2nd May 2016 with the participation of 9 BUBOR-quoting panel banks, to which 3 other banks joined during the summer.
- During Autumn of 2016 the MNB took over the management of BUBOR and other financial benchmark indicators from the ACI Hungary and made additional modifications of the rules of indicators' calculation. By the modifications the information content of the quotations has significantly increased.

Preferential deposit

- *Form*: The preferential deposit account is a deposit account separated from the Counterparty's bank account, where the Counterparty can place an overnight deposit on any VIBER business day specified in the settlement calendar, solely by the way of a transfer from its bank account held with the MNB.
- *Objective*: sterilising the surplus liquidity that derives from disbursements of the Funding for Growth Scheme Fix (FGS fix) from March 2019 and the Bond Funding for Growth Scheme (BFGS) from July 2019 at the central bank base rate
- Banks can use this preferential deposit facility, if fulfill at least one of the following conditions:
  - Participating in the FGS fix as direct counterparty;
  - Owning securities belonging to a series of securitites purchased by the MNB in the frame of BFGS, or banks' affiliates* owning these kind of securities** which are banks' corresponding credit institutions***

Until February 2019 the preferential deposit facility was available for banks committed to lend SMEs in the frame of Market-Based Lending Scheme (MLS) started at the beginning of 2016.

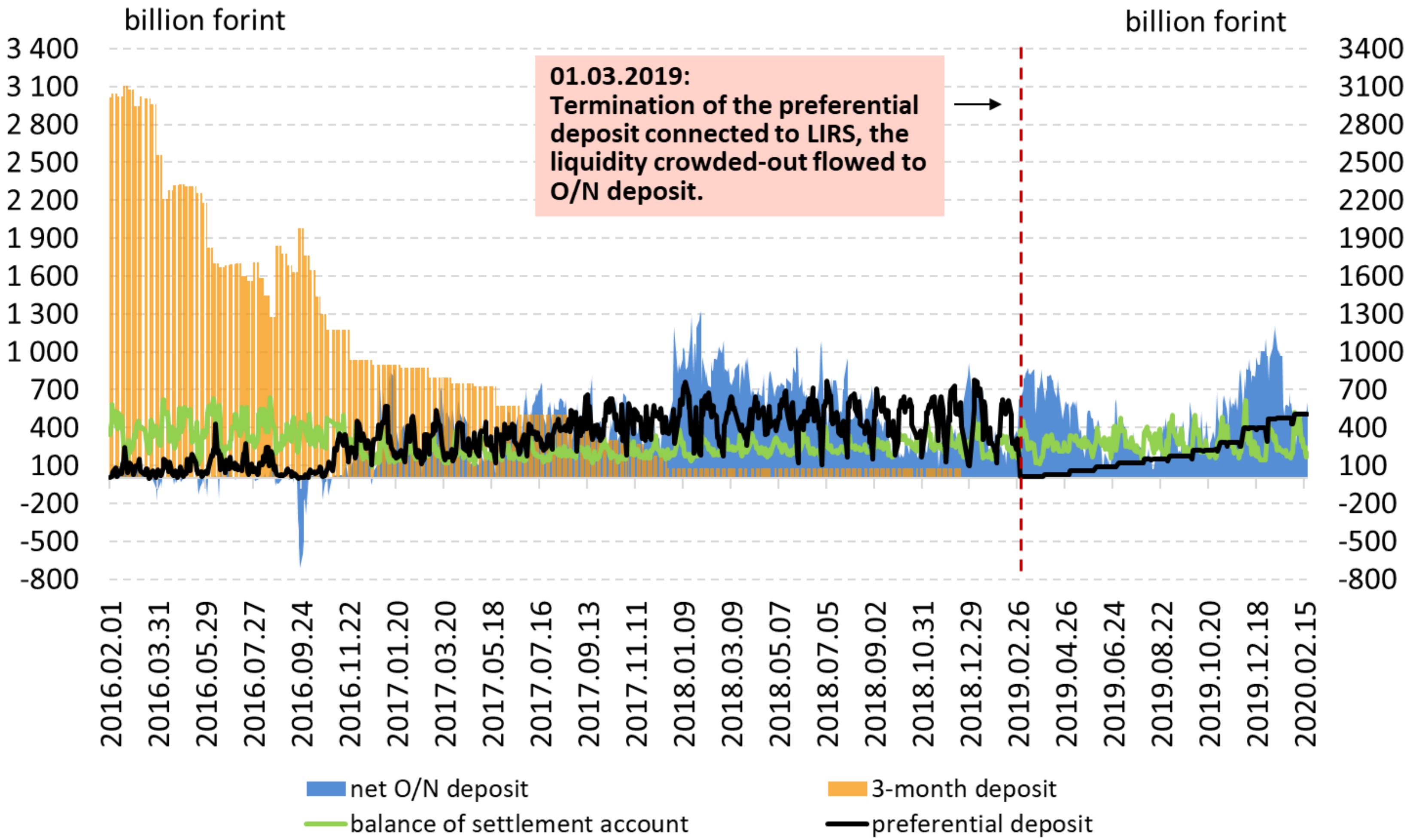
In February 2019 the Market-Based Lending Scheme was terminated, therefore the <u>preferential deposit facility linked to MLS</u> was also terminated causing the decrease of preferential deposit in March 2019 and the increase of the stock of O/N deposit.

**according to Terms and conditions of the operations of the central bank in forint and foreign currency markets*

***securities belonging to a series of securitites purchased by the MNB in the frame of BFGS*

****according to MNB Decree 10/2005 (VI. 11.) on the Calculation, the Method of Allocation and Placement of the Minimum Reserves*

Development of the stock of preferential deposit until 19.02.2020

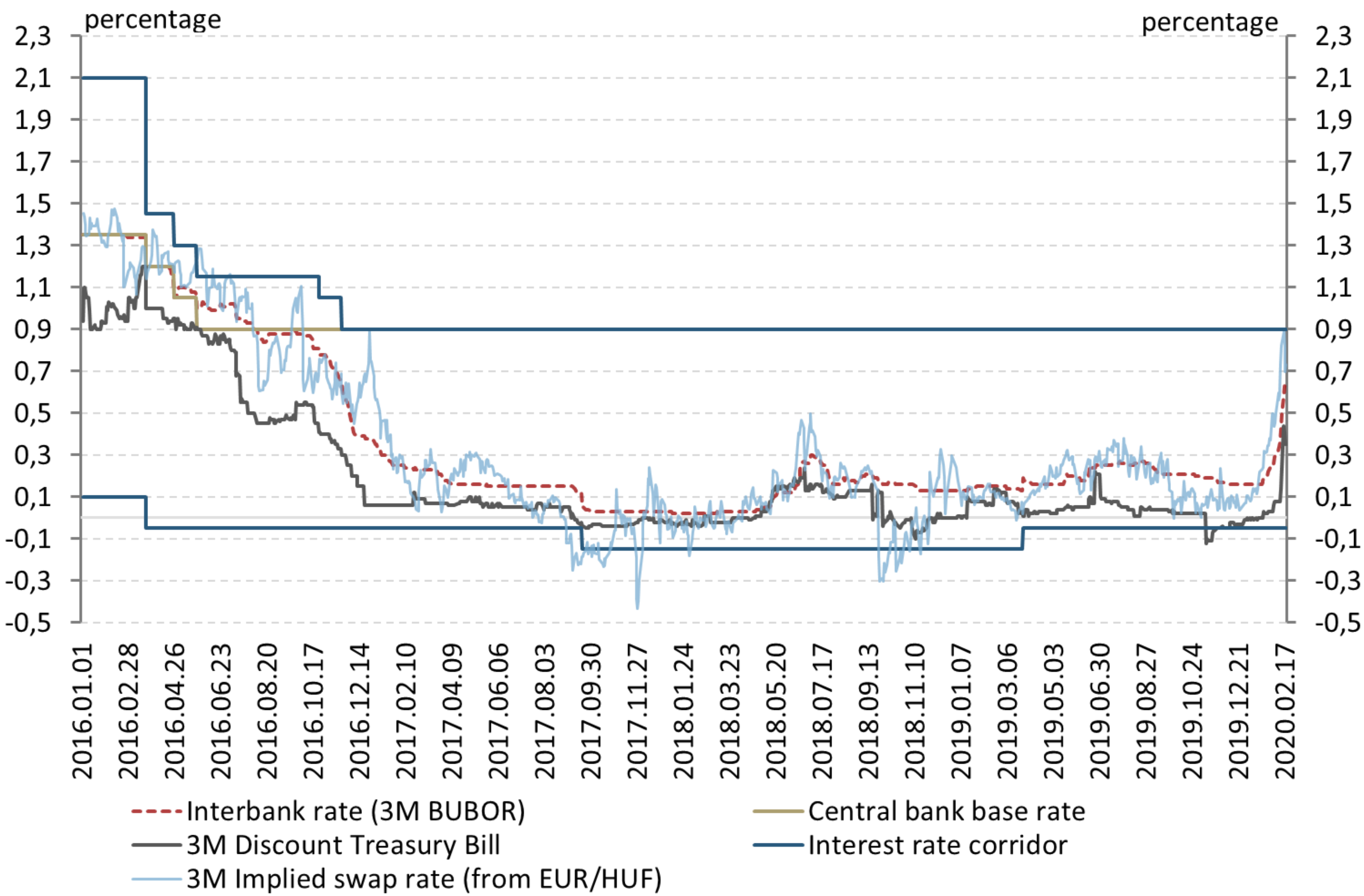


Loan tenders

- *Form*: 1-week, fixed-rate collateralised loan tender*
- *Objective*: provide liquidity to banks in case of temporary lack of liquidity or ad hoc, unforeseen liquidity-absorbing shock(s)
- Available for banks from 30.09.2015 on a weekly basis
- The MNB may settle the concluded trades even if the securities collateral is insufficient. In this case, after the collateral revaluation, the counterparty receives the minimum balance set for its bank account.
- The interest rate applied in the transaction is fixed during the tender, since 23.11.2016 it has been equal with the central bank base rate
- The counterparty is not allowed to make prepayments
- From autumn of 2017 transaction was not made, until autumn of 2017 transactions were made in a sum of Bn 260 HUF, in 2016 in a sum of Bn 8699 HUF, from autumn until December 2015 in a sum of Bn 1267 HUF

**In 7th December 2016 the MNB discontinued its 3-month, variable-rate collateralised loan tender*

Short-term market interest rates in the central bank interest rate corridor from 01.01.2016 till 20.02.2020



The MNB's strategic framework of monetary policy instruments published in September 2018 (1)

The Monetary Council announced in September 2018 that the MNB is **prepared for the gradual and cautious normalisation of monetary policy**.

The future monetary policy-making begins with the modification of unconventional instruments:

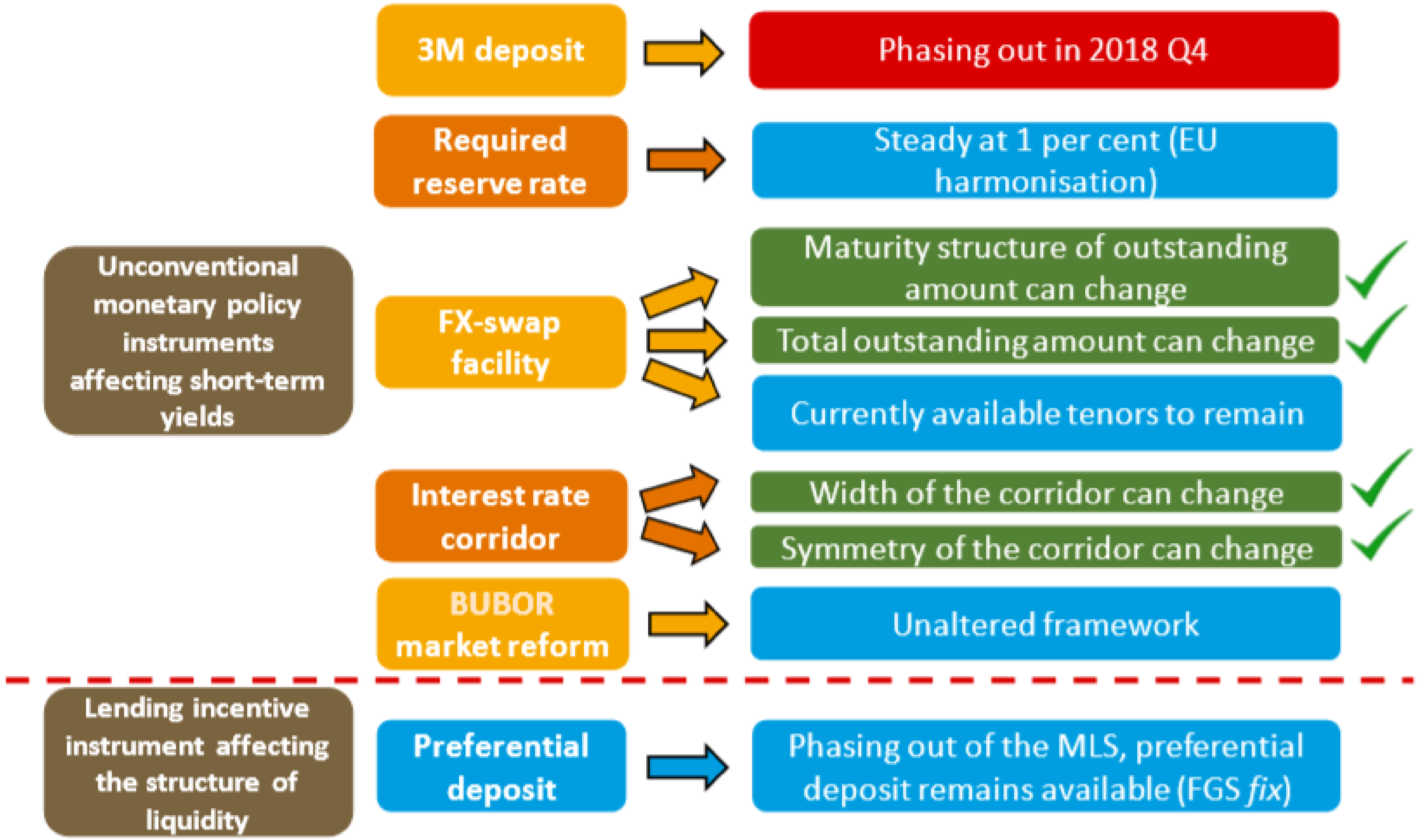
- During the formulation of monetary policy, the MNB applies the optimal combination of the measures related to the Bank's foreign exchange swap instrument and the interest rate corridor.
    - The MNB regards the **foreign exchange swap instrument** as a **strategic element** of monetary policy instruments, also in the future. The MNB **maintains part of the FX-swap portfolio persistently and on a stable basis** and maintains its presence in the FX-swap market **on all presently existing maturities** (1W, 1M, 3M, 6M, 12M).

The MNB’s strategic framework of monetary policy instruments published in September 2018 (2)

  - The stock of central bank FX-swap instrument may change, but won’t decrease to zero in the mid-term. The MNB **hold permanently the substantial part of its FX-swap portfolio** in its balance sheet.

- In terms of the transmission of monetary policy, the MNB regards the deposit and loan instruments, and thus the width and symmetry of the interest rate corridor, equally important.
- The MNB continues to decide regularly on the crowding-out from instruments bearing interest at the base rate and on its swap instrument portfolio.
- The current BUBOR market framework and the minimum reserve ratio won’t change. The **preferential deposit** – connecting to the FGS fix recently started – **remains part of the set of monetary policy instruments**.

Strategy about the set of monetary policy instruments affecting short-term yields



Funding for Growth Scheme Fix (FGS fix)

- *Form*: a source of refinancing for banks at a 0% interest rate, which banks can lend to SMEs with an interest margin of up to 2,5% to finance new investments in forint
- *Objective*: to have a significant impact on the structure of SME-lending
- Launched at the beginning of 2019 by the MNB with a total amount of HUF 1,000 billion
- In terms of its most important parameters and its operation, the new scheme will be identical with the previous phases of the FGS, they differ in a few points below (more targetted):
  - loans may only be provided for maturities longer than 3 years
  - loans may only be provided for investment, and within that the range of utilisation will be narrower compared to the third phase
  - the scheme is neutral in terms of liquidity, as the excess liquidity arising from the program will be sterilized at base rate by the preferential deposit

Bond Funding for Growth Scheme (BGS)

- *Form*: Within the scope of the scheme, for a facility amount of HUF 300 billion the central bank will purchase bonds with good ratings issued by non-financial corporations based in Hungary as well as securities backed by corporate loans
- The Scheme complementing the FGS fix started from 1st July 2019 with a facility amount of HUF 300 billion
- *Objective*: the increase of the liquidity of the corporate bond-market (providing an alternative to bank financing primarily for larger companies), improving the efficiency of monetary policy transmission
  - as the market becomes more liquid, credit claims on SMEs may also later appear in securitised form, which may result in a further improvement in financing conditions in the SME sector
- The MNB intends to sterilise the excess volume of funds resulting from the program with the preferential deposit facility
- The purpose, conditions and operation of BGS heavily relies on the European Central Bank's corporate sector purchase programme (CSPP)
  - Credit rating of the bonds to be purchased is at least B+, original maturity of the bonds is minimum 3 years, maximum 10 years, denomination of the bonds is forint
  - Proportion of MNB's purchase per bond series is maximum 70%
  - Maximum exposure of the MNB per corporate group is HUF 20 billion
  - Minimum volume per issuance is HUF 1 billion

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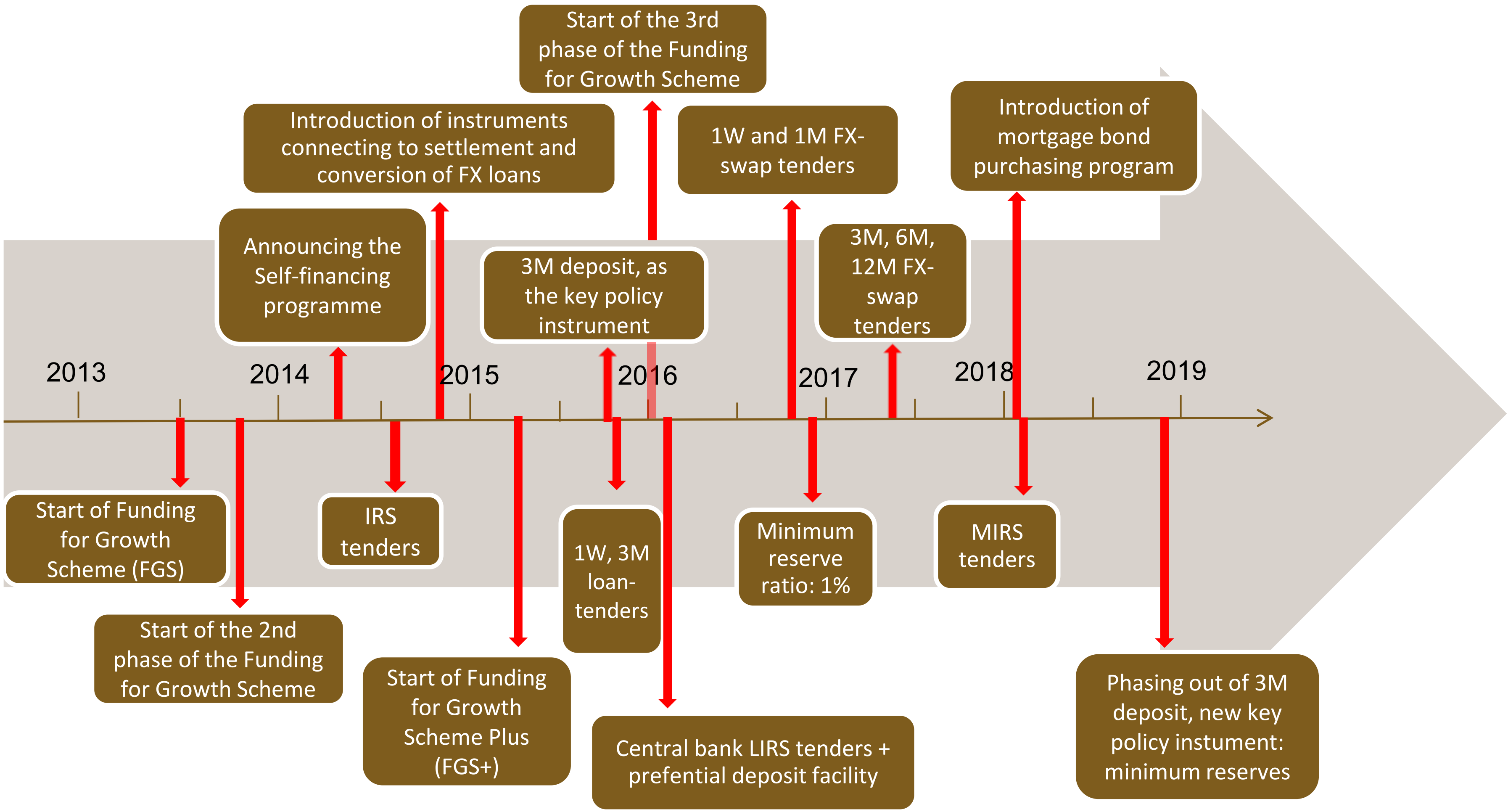
Provisions about the set of monetary policy instruments (2013-2018)



*: unconventional (UC)

Funding for Growth Scheme (FGS)

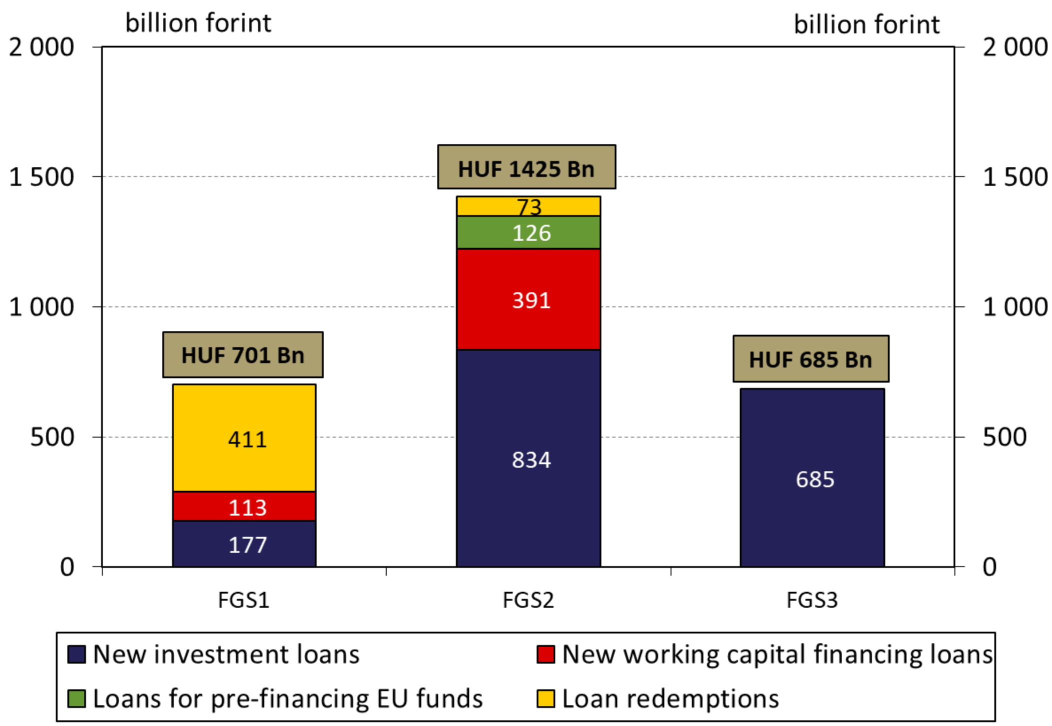
- *Form:* MNB gave refinancing loan to credit institutions at a 0% interest rate, from which banks can lend SMEs with a capped interest margin (maximum 2,5%)
  I. pillar: SME loans (as well as factoring és leasing)
  II. pillar: conversion of foreign currency loans to forint loans, redemption of loan for the pre-financing of EU subsidies

  Objective: to alleviate disruptions observed in lending to small and medium-sized enterprises (SME), strengthening financial stability and reducing the external vulnerability of the country
- Participation in the Scheme was **bound to the following condition**: banks had to lend SMEs with the amount equivalent with central bank loans banks received from the MNB in the I. and II. pillars of the program. (In case of III. pillar the reduction of short-term external debt of the credit instritution was the condition.)
- **The 1st phase of the FGS** started the beginning of June 2013
- **The 2nd phase of the FGS** started in October 2013. In September 2014 the Monetary Council decided to **increase the overall amount available** of the 2nd phase.
- In March 2015 FGS was complemented with **the FGS+ facility**
- **The 3rd phase of FGS** started in January 2016

FGS's impact on the lending activity

A total of **Bn 2800 HUF** had been drawn down by **around 40 000 enterprises** between 2013 and 2016.

Distribution of loan purposes in the different phases of FGS



Note: data for the 2nd phase of the FGS include the loans extended under the FGS+, worths Bn 23 HUF

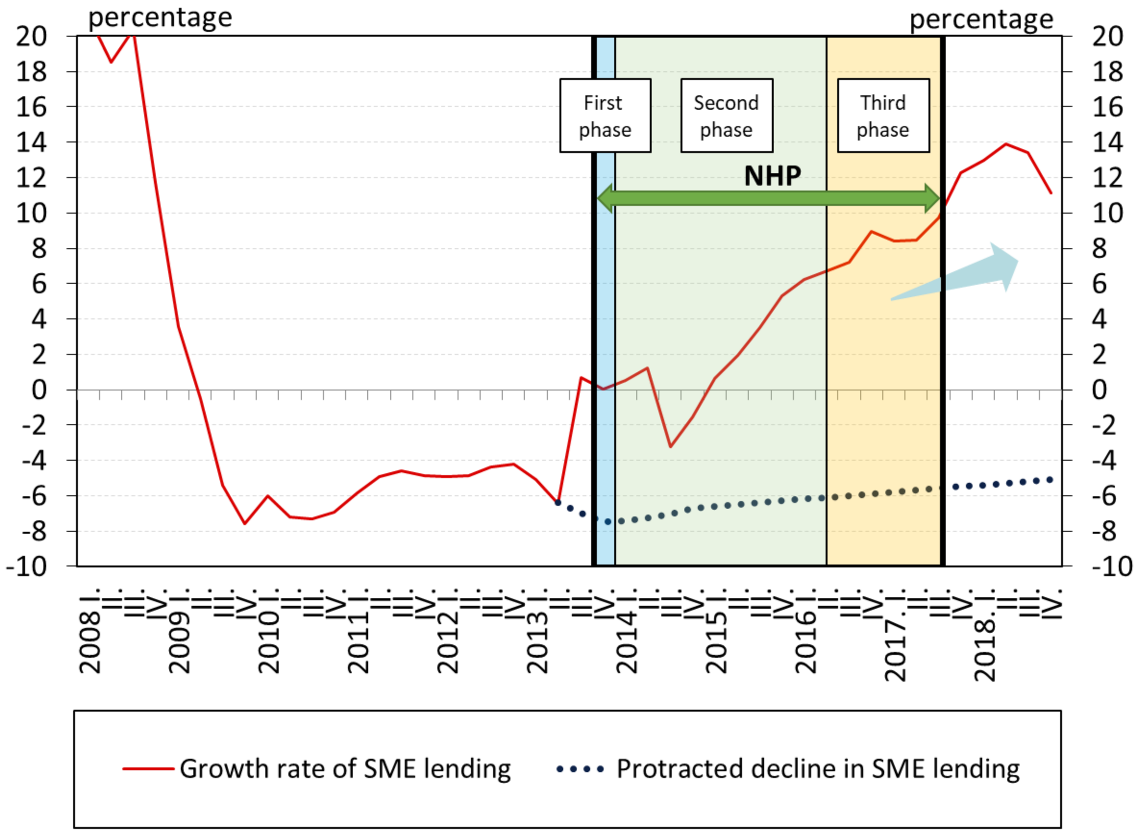
Sum of loan types in the 3 phases :

- HUF 1696 billion investment loans and leasing
- HUF 504 billion working capital financing loans,
- HUF 126 billion loans for pre-financing EU funds
- HUF 484 billion loans remptions

The role of investment loans increased (the 60% of the total amount)

The FGS contributed to turnaround in SME lending and also had a significant impact on the real economy

Based on the MNB's latest estimates, the impact of the FGS on economic growth was **around 3.5 percent between 2013 and 2018** through easing credit conditions and thereby supporting investments.



Further analysises can be found at <u>MNB/Monetary Policy/Funding for Growth Scheme (FGS)</u>

Self-financing programme

On 24 April 2014, MNB announced the **Self-financing programme** that aimed to support reduction of external vulnerability.

In order to **increase the share of domestic sources within the total financing structure**:

- Debt Management Agency renewed the maturing FX-bonds with forint denominated issuances,
- that became achievable by the gradual shift from FX to forint issuances and,
- the increase in the domestic demand

MNB supported the implementation of the self-financing concept by the **modification of certain parameters of its monetary policy instruments**

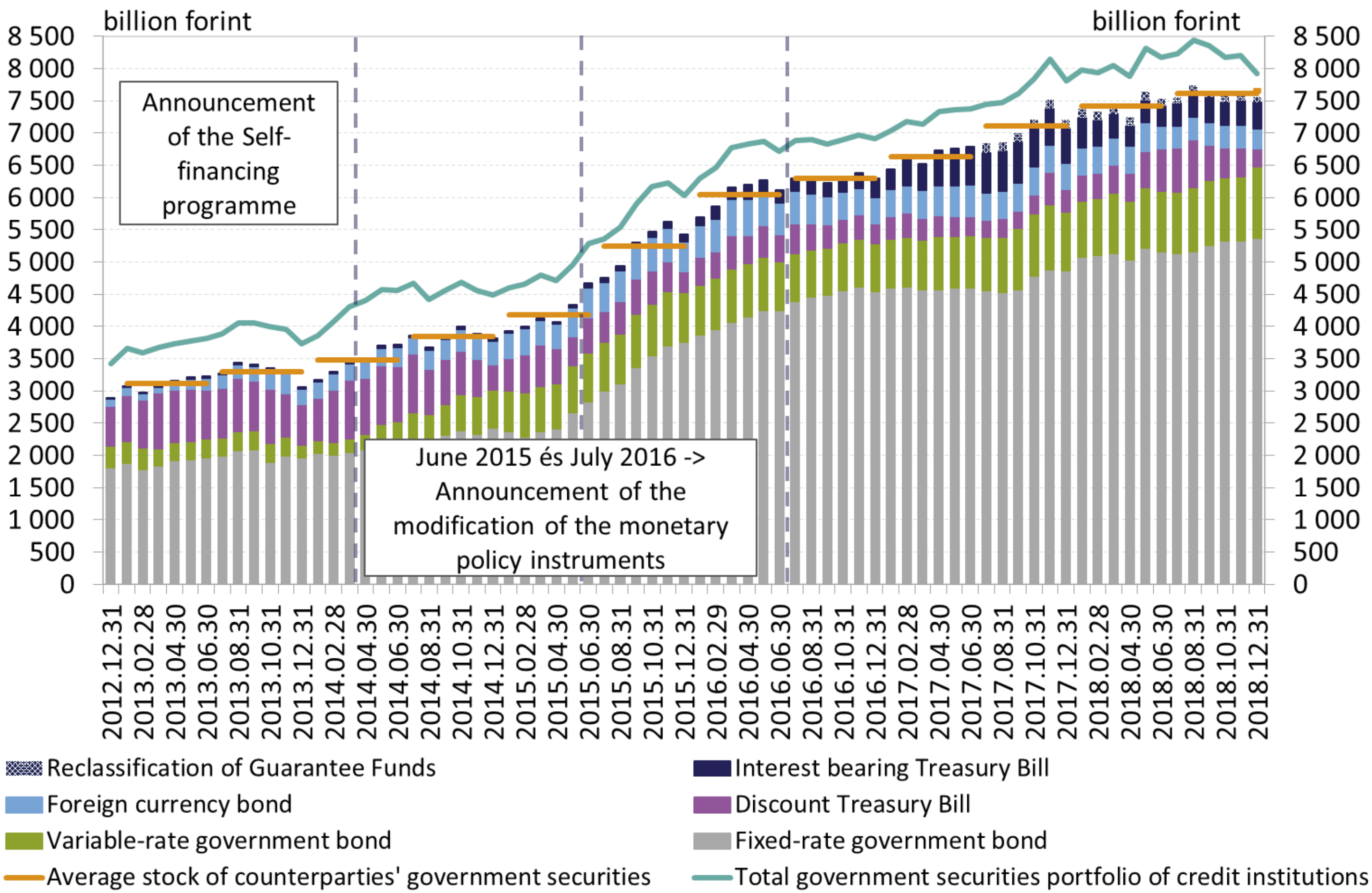
The whole set of moneraty policy instruments of the MNB has been renewed during the Self-financing programme

Instrument	Before the Self-financing programme	During the Self-financing programme (from spring of 2014 to 2016)	In 2018
Key policy instrument	2-week bond	3-month deposit	since 19.12.2018 the minimum reserves
Interest rate corridor	symmetric base rate ± 100 bp	became asymmetric from 25.09.2015 O/N loan: base rate + 75 bp, O/N deposit: base rate - 125 bp from 23.03.2016 till December the interest rate corridor narrowed to 95 bp from 23.11.2016 O/N loan = base rate, O/N deposit: base rate - 95 bp	O/N loan = base rate, O/N deposit: base rate - 105 bp
Minimum reserves	selectable rates: 2-5%	from 01.12.2015 unified Reserve Ratio: 2% from 01.12.2016 Reserve Ratio: 1%	Reserve Ratio: 1%
Collateralised loan	2-week and 6-month maturity	1-week and 3-month maturity (the 3M loan has been discontinued since 07.12.2016)	since 06.09.2017 there hasn't been 1-week collateralised loan transaction
Interest rate risk management tool	-	from 26.06.2014 3-year and 5-year IRS tender, from 06.08.2015 10-year IRS tender from 01-03.2016 HIRS tender	from the beginning of 2018 5-year and 10-year MIRS* tender
An additional tool to manage forint liquidity management	-	from February 2016 preferential deposit 25.09.2015-27.04.2016: limited 2-week deposit since 17.10.2016: 1-month fine-tuning FX-swap (23.12.2016: 1-week FX-swap)	preferential deposit, FX-swap tender (since April 2017 3-month, since May 6-month and 12-month maturities)

** Monetary policy IRS tender*

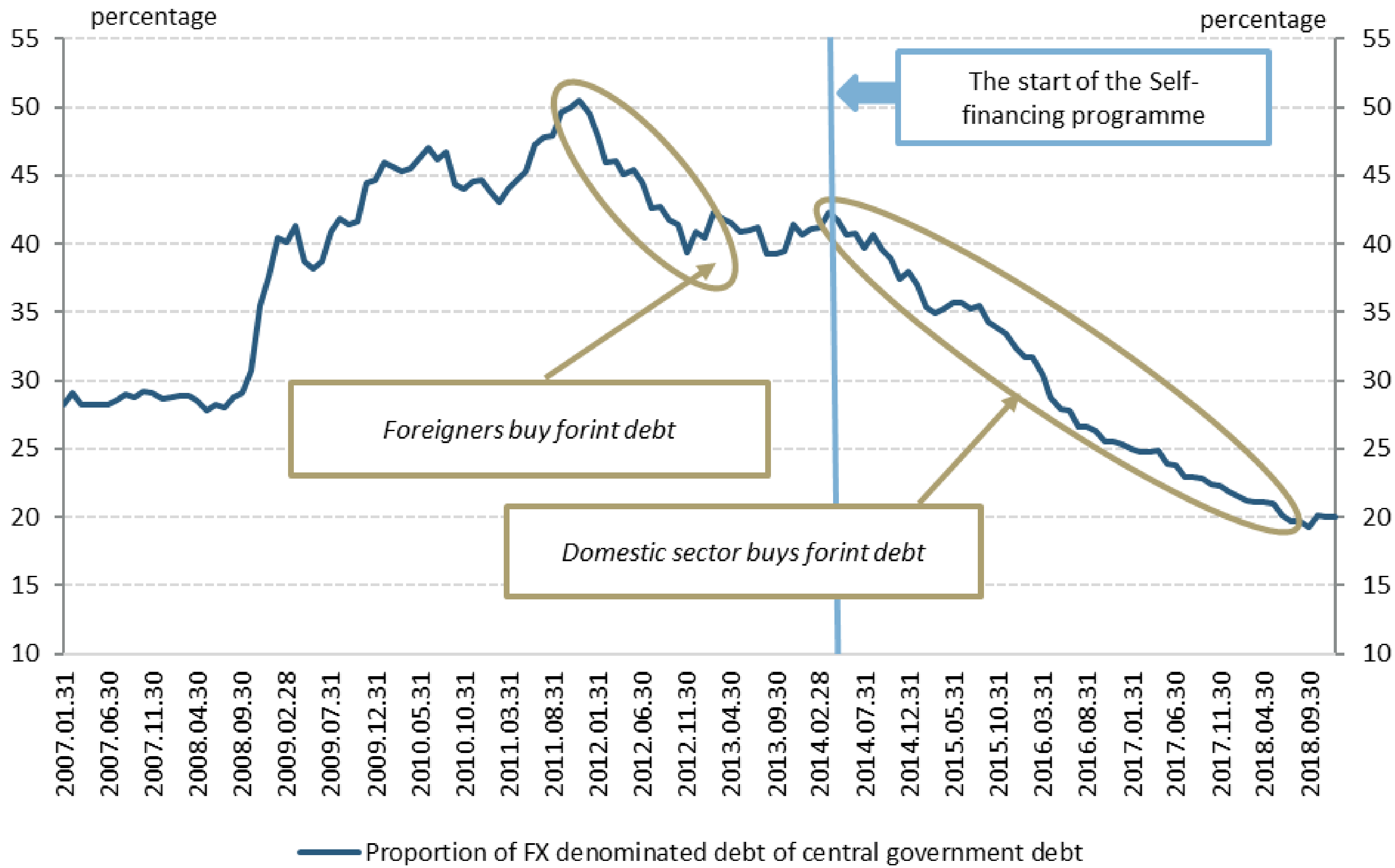
In the active phase of the Self-financing programme (2014-2016) the stock of banks' liquid securities increased significantly

The government securities portfolio of counterparties by type of securities, and the development of total government securities portfolio of credit institutions



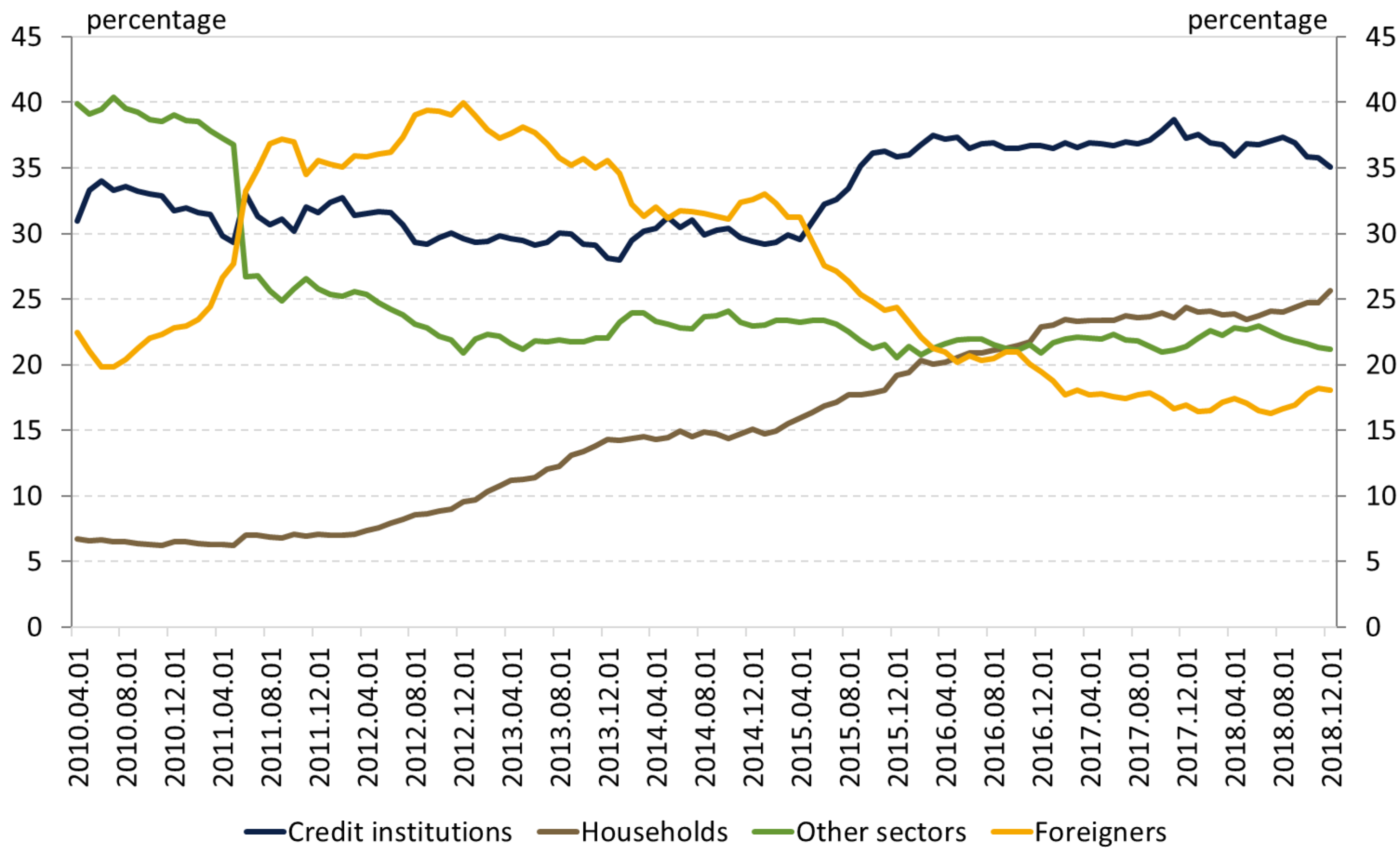
As the result of the programme the proportion of the FX denominated debt of the central government debt decreased significantly by the end of 2018

The proportion of the FX denominated dept of the central government debt between 2007 and 2018



As the result of the programme the proportion of banks and households at the forint government securities market increased while the proportion of foreigners decreased significantly by the end of 2018

Proportion of owners at the forint government securities market



Until December 2012 the proportion of credit institutions also contains the portfolios of money market funds

FX spot tenders related to the phasing out of foreign currency consumer loans

After 2013 the MNB determined the phasing out of foreign currency consumer loans as a strategic goal, the conversion of these loans occurred at the first possible date, in 2014-2015.

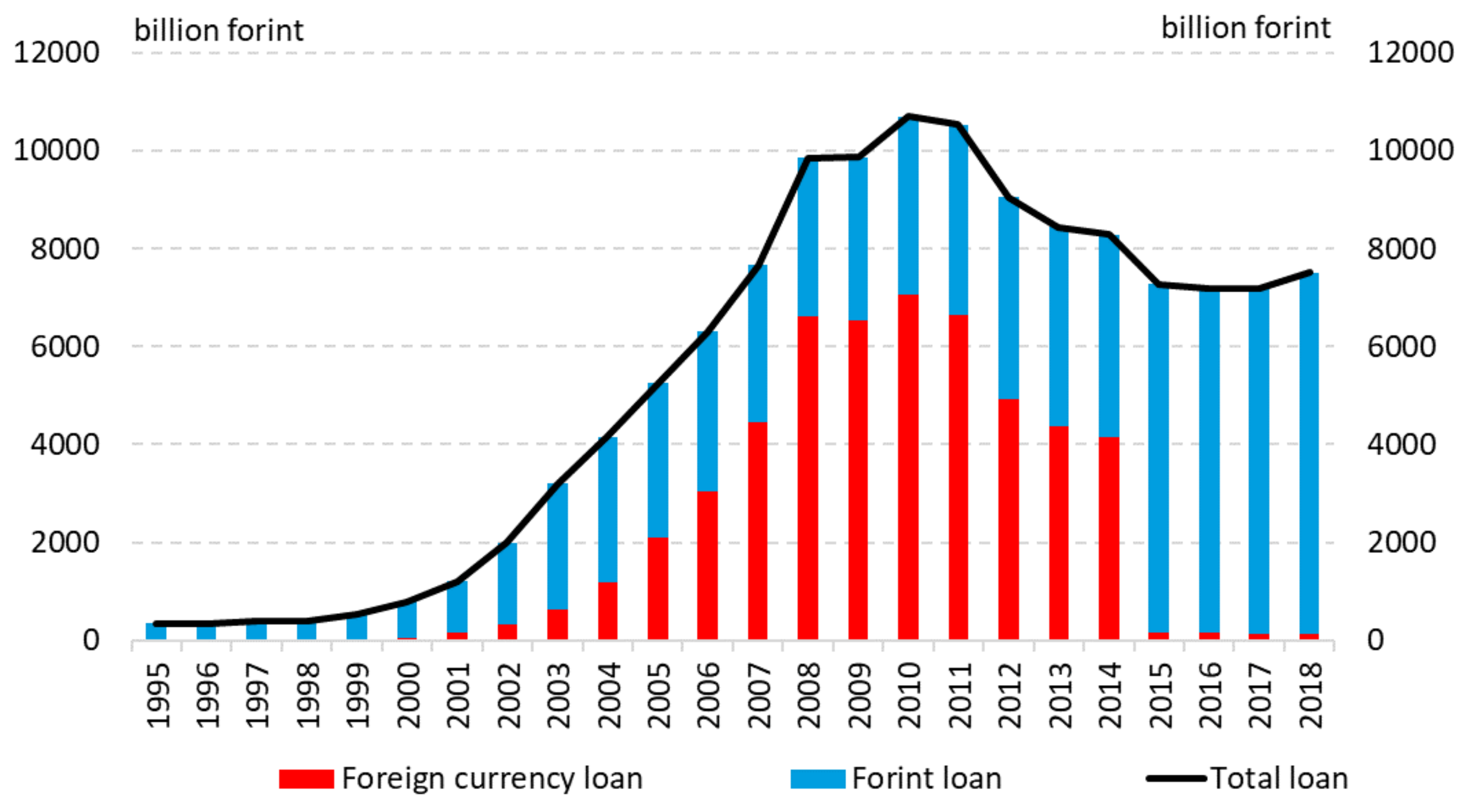
Euro sale tenders (October 2014 – March 2015) related to settlement and conversion of foreign currency consumer loans and Swiss franc sale tenders related to forint conversion of foreign currency non-mortgage consumer loans (August - September 2015):

- *Form:*
  - **Euro sale tenders** (HUF 9,1 billion):
    - *Conditional instrument*: EUR/HUF spot + 1-week EUR/HUF FX-swaps rolled over until 30.03.2016 at the latest;
    - *Unconditional instrument*: cross-currency interest rate swap (CIRS) combined with a spot transaction facility
  - **Swiss franc sale tenders** (HUF 0,6 billion): CHF/HUF spot + CHF/HUF FX-swaps rolled at the most until the 52nd week following the first tender
- *Objective:* to manage/**reduce the currency risk** of banks
- In case of conditional instrument: condition on the reduction in short-term (with a residual maturity of less than one year) external debt
- *Expected effect, result:*
  - ➢ FX spot tenders contribute to the reduction of foreign currency exposure of the private sector and the short-term external debt of domestic banks, thereby to the mitigation of the country's external vulnerability
  - ➢ Decrease of the MNB's total assets, which can improve the profitability of the central bank

Evolution of foreign currency and forint loan portfolios of households

By phasing out of foreign currency consumer loans the Hungarian financial system has taken an important step towards a **healthy balance sheet structure**, while the interest rate transmission and financial stability have also improved substantially.

Evolution of foreign currency and forint loan portfolios of households



Growth Supporting Programme: Market-Based Lending Scheme (MLS)

In January 2016, the MNB launched the **Growth Supporting Programme (GSP)**, which facilitates banks' return to market-based lending with a gradual phase-out of the Funding for Growth Scheme (FGS) and the announcement of the new **Market-Based Lending Scheme (MLS).**

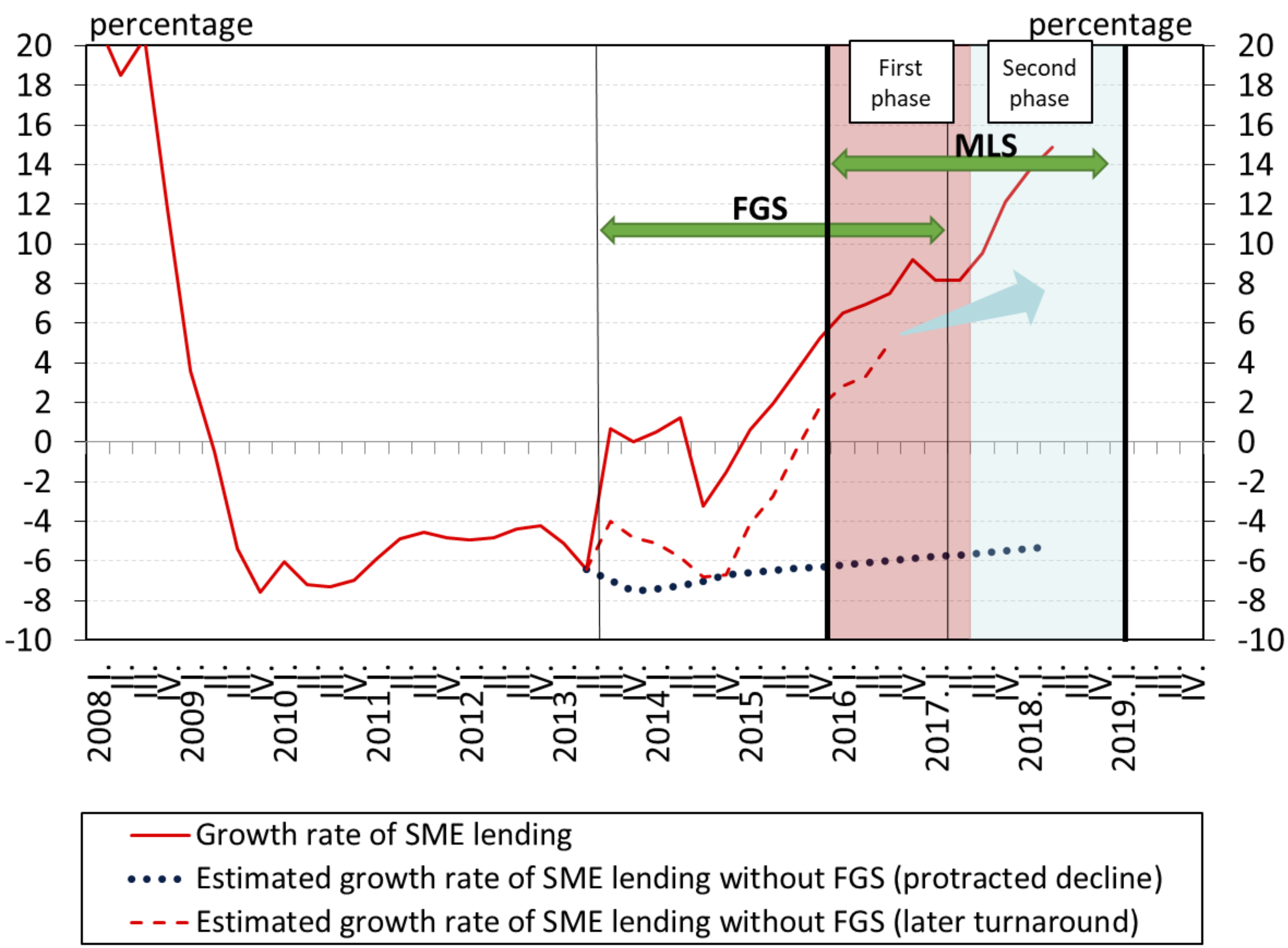
Market-Based Lending Scheme aimed to reduce credit risk and boost economic growth through lending to SMEs. As part of the programme MNB introduced:

- **Interest rate swap conditional on lending activity (LIRS tender)**
  - 3-years IRS that helps to manage banks' interest rate risk arising from lending to SMEs, through partially taking over of this risk by the MNB
  - All swaps matured at the end of February 2019

+

- **Preferential deposit facility**
  - Designed to help banks' liquidity management and provides an incentive to boost their lending activity
  - Phased out at the end of February 2019

The MLS has contributed to keep SME lending dynamic even after the phasing out of FGS



Monetary policy instruments affecting long-term yields

<u>MIRS</u> (Monetary policy interest rate swap facility):

- From January 2018, with 5-year and 10-year maturity, available at no conditionality
- Phased-out at the end of 2018 (total volume reached 1100 billion forint)

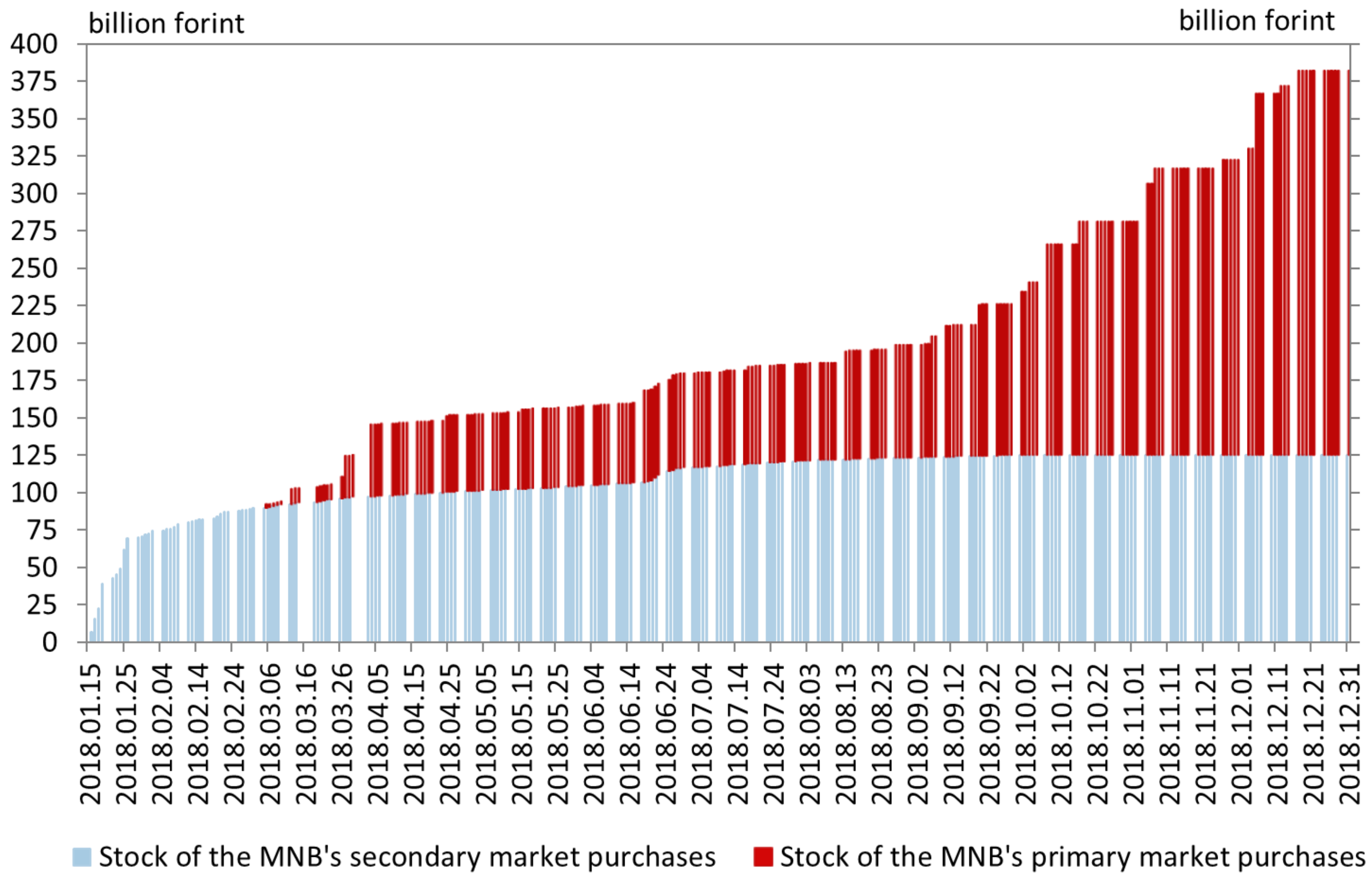
Mortgage-bond purchase programme:

- **Secondary market purchases** (from mid-January 2018 till September 2018)
- **Primary market purchases** (from March 2018 till December 2018)
- To support the development of the Hungarian mortgage-bond market the MNB set the terms of the programme in order to increase liquidity and transparency of this market

Objectives:

- supported the extension of loose monetary conditions to long-term marturities and the long-term maintenance of the central bank base rate
- supported the market stability by their market presence during a global market turbulance in spring and summer 2018
- contributed **to the development of mortgage-bond market**
- Contributed – with other monetary policy instruments and regulations - to the decrease of banks' interest rate risk thereby further spreading long-term, fixed-rate mortgage loans

Mortgage-bond stock of the MNB



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Components of interbank liquidity

Interbank liquidity is determined by the following factors:

*Autonomous factors**

- Incoming and outgoing transfers from the **Treasury Single Account**
- **Cash** in circulation
- **Monetary policy instruments** of the central bank (including the associated interest rate incomes and expenditures)

Central banks can steer the interbank liquidity by two ways:

- On a **discretionary basis**, they set the amount of liquidity that will be absorbed or lent into the market time to time,
- **Direct influence,** through the standing facilities the central bank defines the interest rates on which the banks can place or withdraw the necessary liquidity.

**Autonomous factors: nor the MNB neither banks can infuence their evolution*

Liquidity shocks of the banking system

- There is fundamental difference between liquidity shocks hitting individual banks and the banking system as a whole:
  - **On the individual bank level** risk takes the form of unpredictable customer transactions (inflows and outflows as well)
  - Individual liquidity shocks are manageable in the interbank money market in general
- **Shocks hitting the banking system** as a whole reach all individual banks at the same time (in a different extent).
  - Autonomous liquidity factors: transactions of Treasury account, currency in circulation
  - MNB transactions: tenders, FX transactions, interest payment
  - Central bank instruments support the management of system-wide liquidity shocks (minimum reserves, interest rate corridor, overnight and longer term loans)

One of the sources of shocks hitting the banking system is the variability of the Treasury Single Account (TSA)

- Government expenditures increase, revenues decrease the liquidity surplus of the banking system:
  - Majority of **government expenditures** (e.g. wage disbursements of the public sector, pension payments) arrive to current accounts held at banks, therefore they increase the liquidity of banks through the intermediation of payment systems (the liabilities side of the MNB balance sheet is restructured)
  - In the case of **tax income** and **social security contributions**, enterprises transfer money from their bank accounts to the Treasury account reducing the liquidity of the banking system
  - **Debt financing** items have a similar effect on the liquidity of the banking system: interest payments and redemptions related to public debt mean government payments to bank customers and thus increase liquidity, while the issuance of government securities decreases the liquidity of banks

Volatility of treasury accounts is the most important autonomous liquidity factor

Daily movements in the Treasury Single Account (TSA) are hardly predictable and imply a significant (HUF 400-500 billion a day in some cases) liquidity effect.

Smoothing of the Treasury account supports the reduction of the volatility of money market yields:

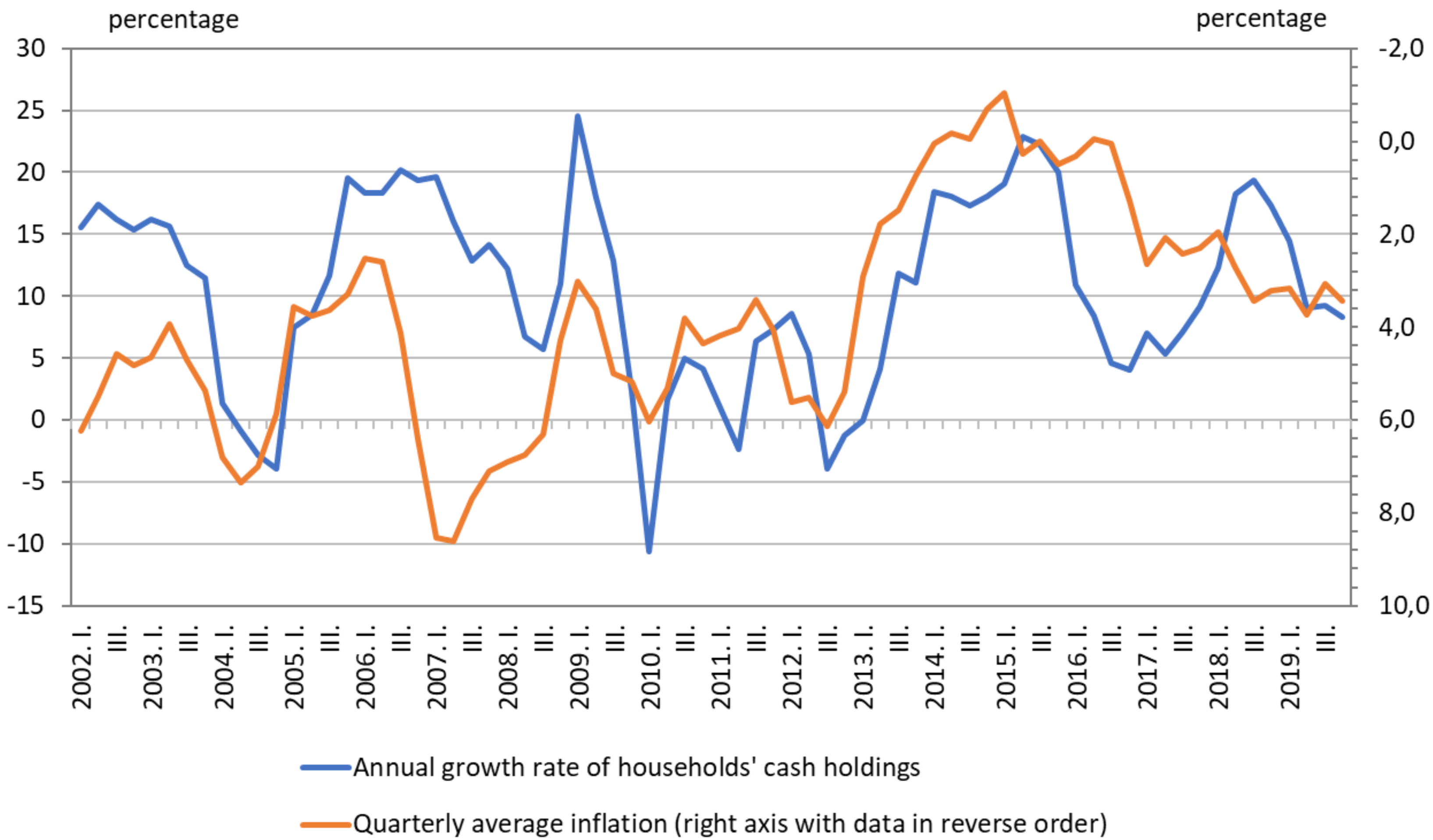
- When the available liquidity of the banking system increases and the Treasury account balance decreases due to government expenditures (e.g. pension payments), borrowing by the ÁKK (passive repo) elevates the balance on the Treasury account and decreases the liquidity surplus of the banking system at the same time
- When government income (e.g. VAT) increases the Treasury account balance and the liquidity surplus of banks decreases, equilibrium is achieved by money market lending (active repo) by the ÁKK

Other source of shocks affecting the aggregate liquidity of the banking system is the change in demand for cash

Changes in the demand for cash cause minor liquidity shocks (daily HUF 40-50 billion maximum), and some of its factors are well predictable:

- On the one hand the demand for cash is driven by **seasonal factors**:
  - Weekly seasonality: demand for cash decreasing in the first half of the week and increasing in the second
  - Seasonal patterns within a year: hike in the demand for cash holding before end-of-the-year and mid-year multi-day holidays, while decreases after holidays
- On the other hand **economic growth** and **inflation** also affect the demand for money
  - Opportunity cost of holding cash as non-interest bearing instrument varies with inflation. The decrease (increase) of inflation is generally accompanied by the rise (drop) of the growth rate of cash holdings of the public

Year-on-year growth of cash holdings of the public and inflation (quarter/corresponding quarter of previous year) between 2002 and 2019Q4



Opportunities of interbank liquidity management

Expected weekly average liquidity

- *Liquidity prognosis* published by the MNB on a weekly basis to support banks' liquidity management

  Every Wednesday at 9 am, the central bank publishes its prognosis that captures the average total level of all factors that impact the interbank liquidity in the next 7 days. The publishing date can vary in case of holidays.

Practices to handle intraweek liquidity shocks

- Change of balance of bank account (reserve requirements need to be met on a monthly average),
- Change of preferential deposit account (banks have a daily limit on their preferential deposit accounts)
- Short term lending or deposit taking on the interbank market
- Use of overnight standing facilities (O/N deposit or collateral loan)
- Participation on the MNB's regular FX-swap tenders

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https://www.mnb.hu/en/monetary-policy/monetary-policy-instruments/studies-presentations-and-handbooks-about-the-operational-framework/studies

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