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# TURBULENT TIMES: THE CASE STUDY OF HUNGARY

# A VERY BRIEF HISTORY OF SETTING UP A CENTRAL BANK IN HUNGARY...


**From 16th century**
- Hungary is under Habsburg rule

**1816**
- Tasks of the central bank performed by the Austrian National Bank

**1848**
- Hungarian revolution brings up the need to establish an independent national bank, which regulates and supervises finances and is one of the guarantees of national independence

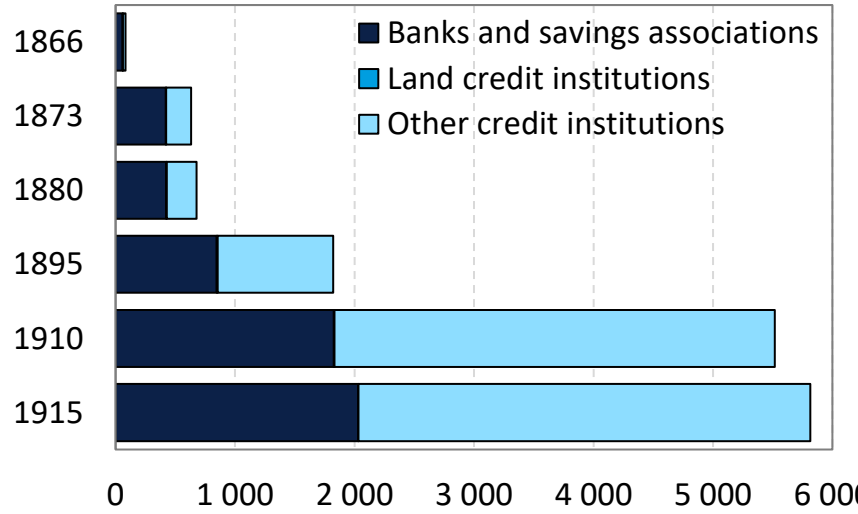
**1878**
- Austrian National Bank renamed to Austro-Hungarian Bank, functions effectively as a central bank (prints money), but also active in investment and commercial banking

**1905**
- The main building of the Budapest branch of the Austrian-Hungarian Bank is inaugurated

**1918**
- Austria-Hungary losing in WW1, dissolution of Monarchy, the Austro-Hungarian Bank needs to be liquidated

# MICRO VIEW OF FINANCIAL STABILITY IS CLOSELY LINKED TO THE FINANCIAL DEEPENING IN HUNGARY

- Savings Associations foundations in the 18th and 19th century – only soft supervision
- Stock exchange establishment and growing financial system during the last decades of the 19th century, but the regulation was still in its infancy
- First principles (without setting up an authority): capital adequacy of financial institutes, jurisdiction of a Supervisory Board, balance sheet issues
- Bank founding fever in the early 20th century: the banking sector significantly increased its influence in domestic economy
- New pillars were constructed: prevention instead of ex post handling, risk-averse approach → permanent control mechanism




**NUMBER OF FINANCIAL INSTITUTES (1866-1915)**

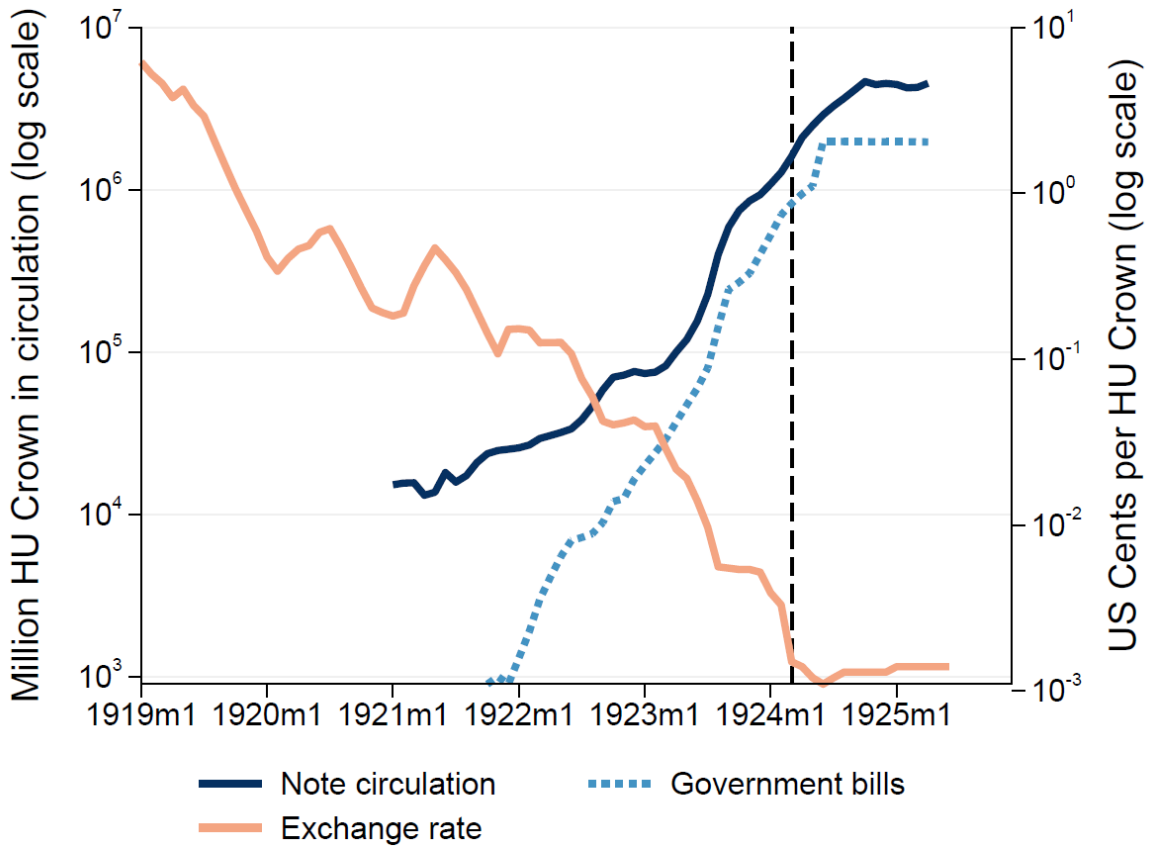
NEED FOR SUPERVISION → **Establishment of the first banking supervision authority in 1916: Financial Center („Pénzintézeti központ")**

Source I B. Varga, 2019

# DISINTEGRATION LEADS TO HIGH AND HYPERINFLATION

1. Money already lost its value significantly by 1918 due to the financing needs of the wartime economy
2. After the dissolution of Austria-Hungary, individual independent nations stamp the Austrian crown and create unbacked paper money
3. Reparation obligations imposed by the victorious powers during the Trianon Peace Treaty far exceed their performance capabilities
4. Rising financing needs of the economy and the budget deficit leads to money printing
5. Increasing the speed of circulation of money due to the increasing amount of cash in circulation and the depletion of gold reserves during the war

**NEED FOR FINANCIAL STABILITY**



# INTERACTIONS BETWEEN FINANCIAL STABILITY & MONETARY POLICY DURING THE GFC

# PRICE AND FINANCIAL STABILITY: TWO SIDES OF THE SAME COIN?



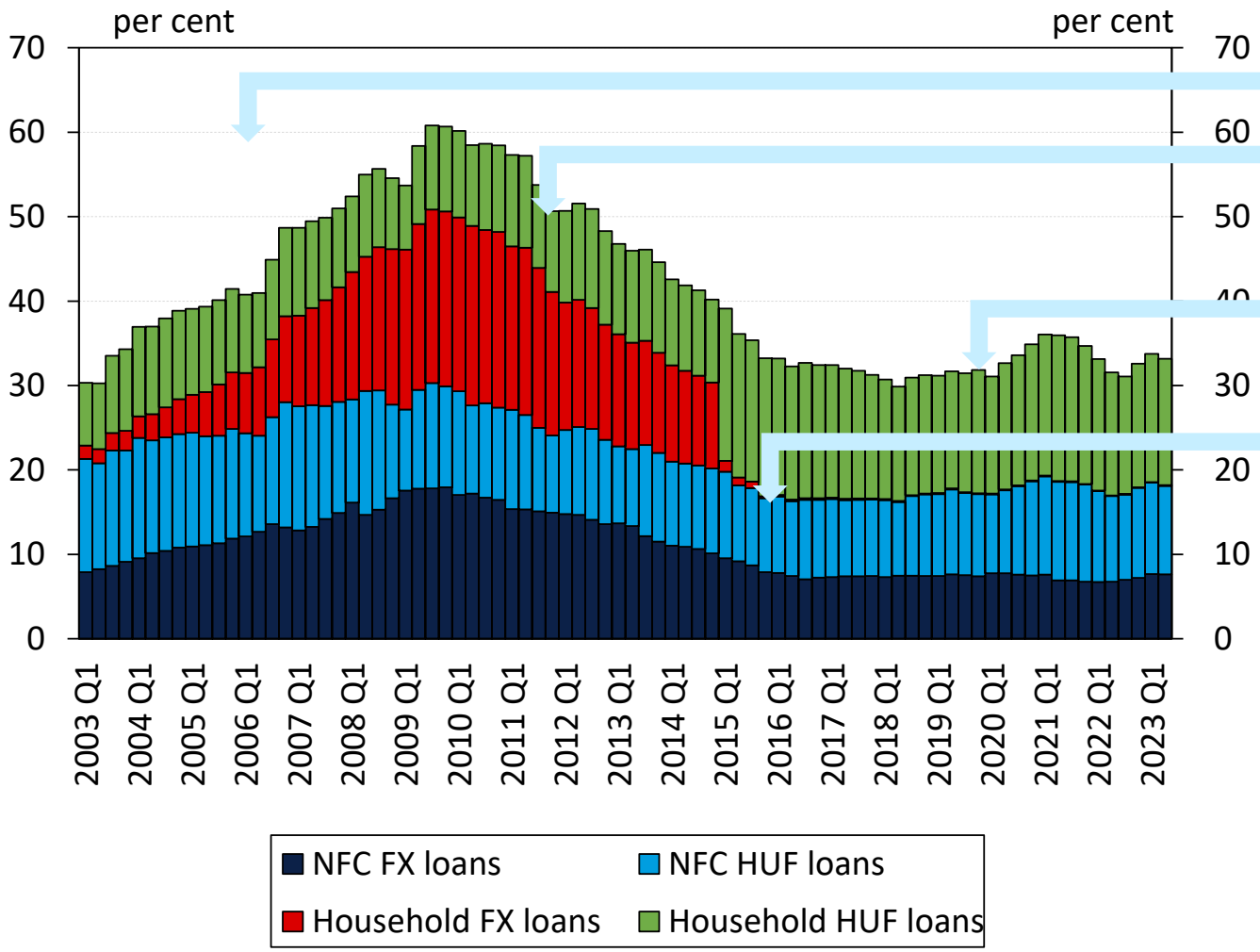
**After the GFC, the discussion on the strategic complementarity between achieving price and financial stability was reinvigorated** (e.g. Smets, 2013)

- Financial crises and the breakdown of financial intermediation greatly endanger the price stability objective

**Two interrelated questions remain:**

- Macroprudential policy aims at curbing systemic tail risk, but is it effective enough, especially when monetary policy fattens the tail?
- How significant are the ”risk taking”, ”asset price”, ”credit” and other less traditional, financial system based channels of monetary transmission? How to calibrate the monetary instruments in parallel with an active macroprudential policy?

# FINANCIAL STABILITY IMPLICATIONS CAN LIMIT THE LEEWAY OF MONETARY POLICY: SUCH AS THE HIGH FX LOANS INDEBTEDNESS




INDEBTEDNESS OF NON-FINANCIAL CORPORATIONS AND HOUSEHOLDS AS A PERCENTAGE OF GDP

FX lending

Deleveraging

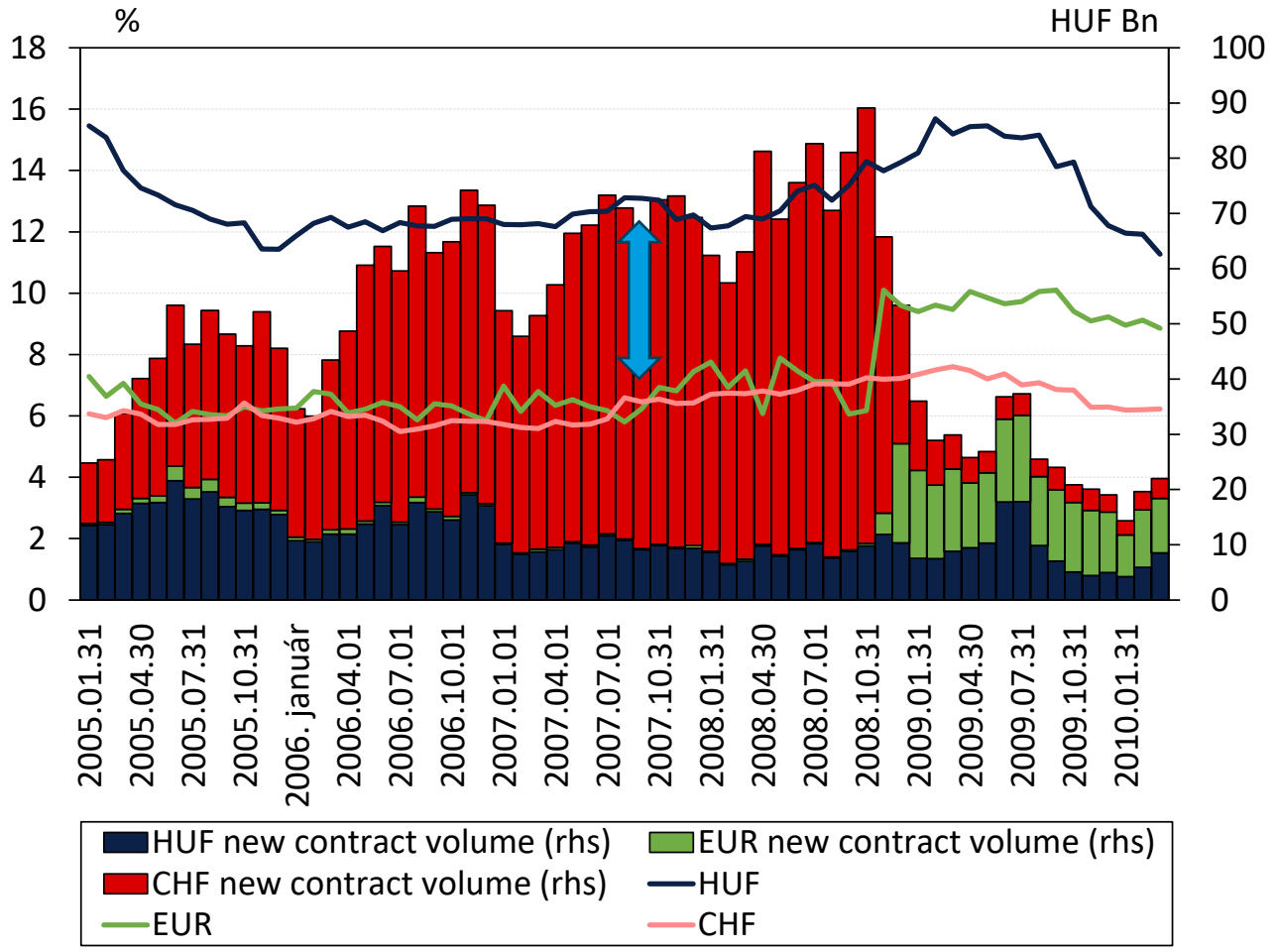
New loan cycle

Funding for Growth Scheme

- **Before the global financial crisis there was a significant build-up of debt in the private sector, which markedly limited the leeway of monetary policy stabilisation**
- **The high FX risk exposure limited the possibility for decreasing interest rates**

# THERE WAS A SIGNIFICANT INTEREST RATE DIFFERENCE BETWEEN DOMESTIC CURRENCY AND FX LOANS

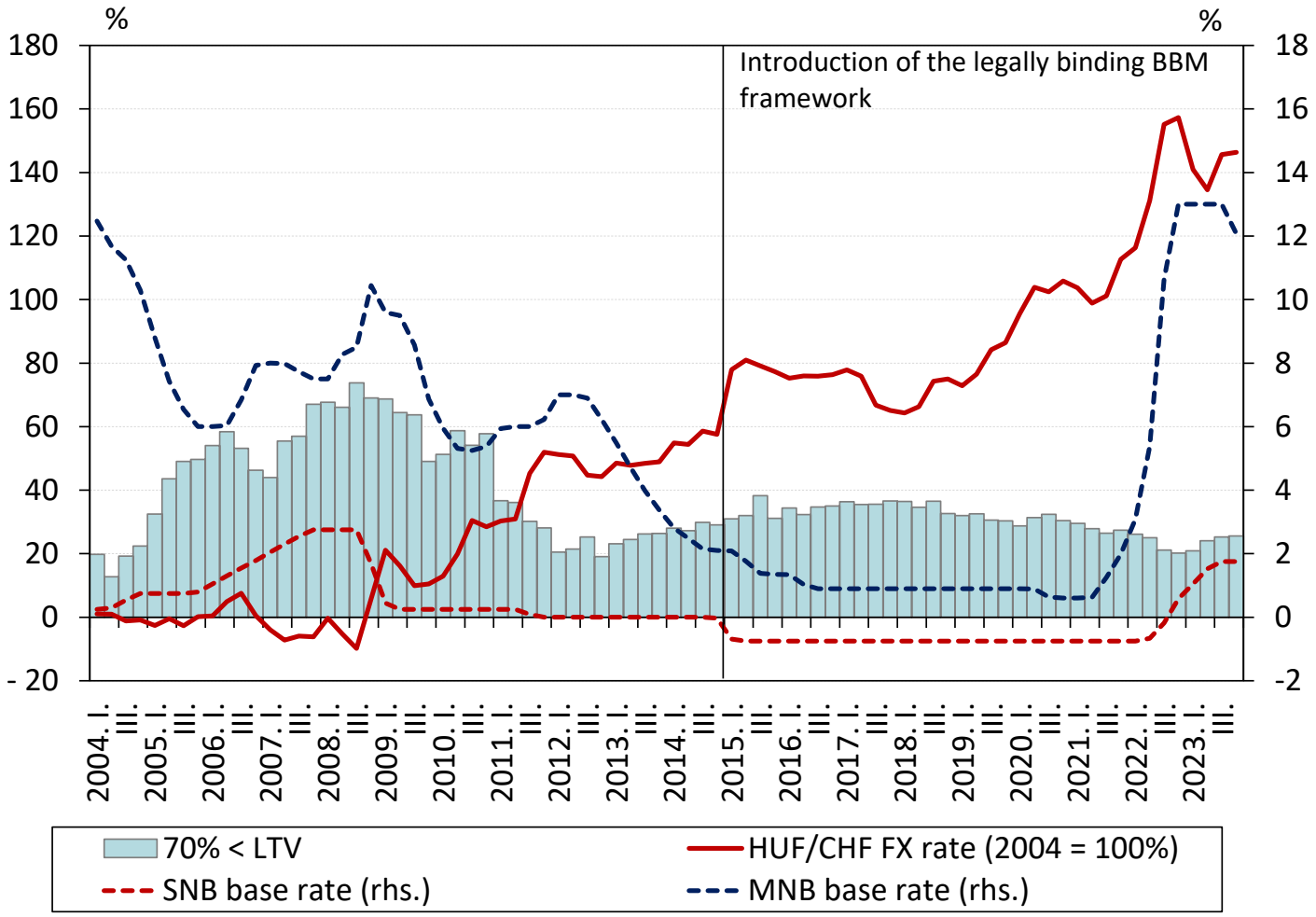
Average 6% interest rate difference




***Average interest rate of new housing loans and the amount of new contracts from the credit institution sector***

- At the time of disbursement, **installments were higher by 60-100 per cent for a domestic currency housing loan on average**, based on the maturity of the loan.
- **This partly led to the widespread take-up of FX loans in the retail segment**, in most cases without FX income and therefore running an exchange rate risk.
- Also, **a general belief in the near-term introduction of the EUR may have contributed to a dulled sentiment of currency risk.**

# THE RISK OF FX INDEBTEDNESS WAS FURTHER EXAGGERATED BY LAX LENDING STANDARDS




***Share of new housing loans with loan-to-value ratio over 70% and the evolution of the CHF FX rate and the SNB and MNB base rate***

- The FX risk of households were further aggravated by the **high LTV mortgage lending**
- The **repricing of the FX capital and the plunge of house prices** limited the viable exit options from mortgage loans.
- **Monetary policy had to maintain the high interest rate environment** even during deep recession to prevent the HUF depreciation and an extreme increase in total debt (hence LTV) and installments.
- This resulted in a **severe financial stability and social crisis**.

Source: OECD

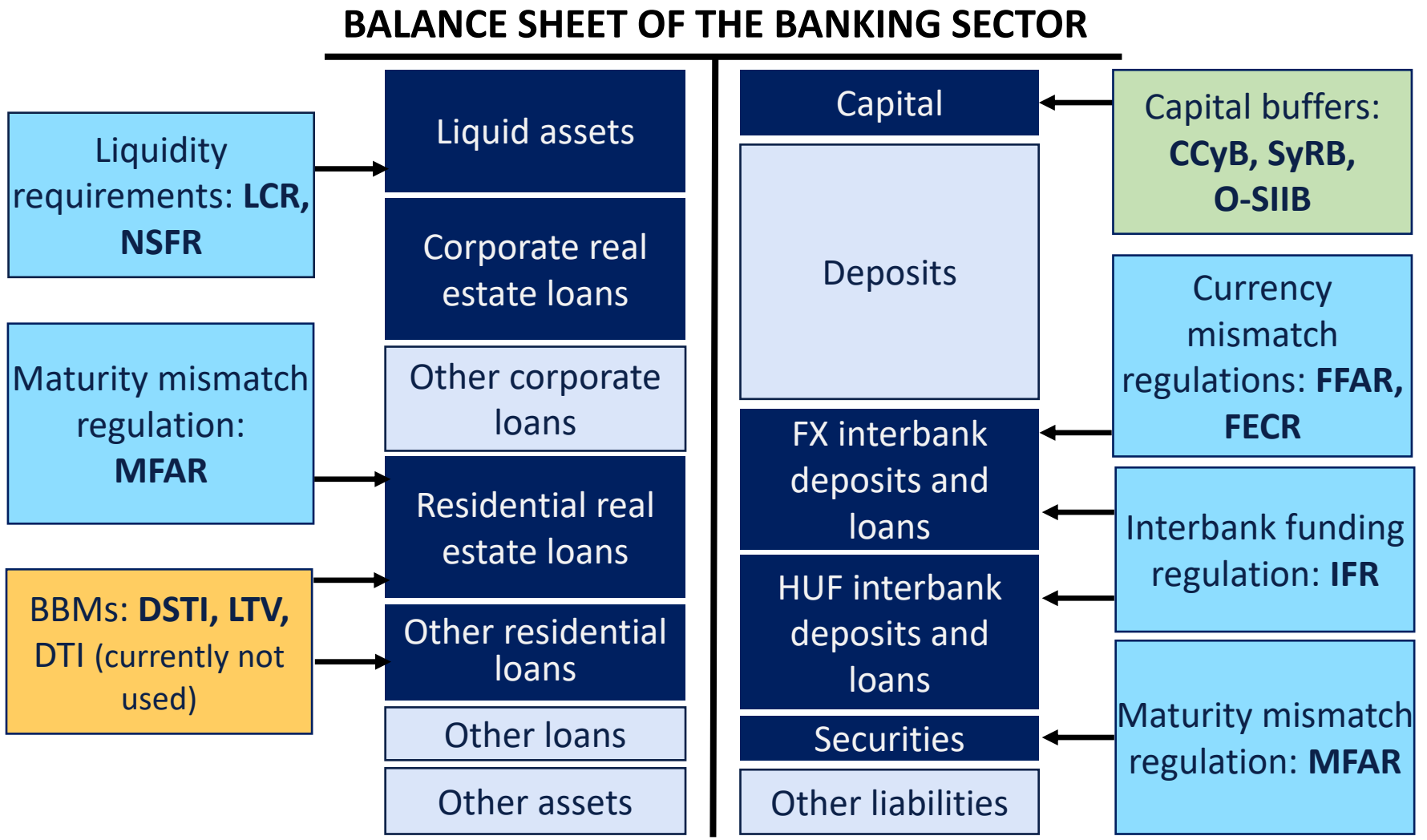
# HOW MACROPRUDENTIAL POLICY CAN INCREASE THE HEADROOM OF MONETARY POLICY

# THE SILVER LINING: AS A RESULT OF BANKS' EARLIER RISK-TAKING, THE MNB WAS GIVEN A VERY STRONG MACROPRUDENTIAL MANDATE

**Macroprudential capital buffers**
(higher loss absorbing capacity)

**Liquidity and funding regulations**
(enhancing liquidity and stable funding)

**Borrower-based measures**
(limiting credit risk taking)



# THE MNB OPERATES A RANGE OF FINANCING REQUIREMENTS IN ITS OWN (NATIONAL) COMPETENCE TO PREVENT EARLIER FUNDING PRACTICES

## Comprehensive liquidity and financing requirements

$$FFAR = \frac{\text{Available stable FX funding}}{\text{Required stable FX funding}}$$

$$FECR = \frac{\text{FX assets} - \text{FX liabilities}}{\text{Balance sheet total}}$$

$$IFR = \frac{\text{Funds from financial corporations}}{\text{Balance sheet total} - \text{Own funds}}$$

$$MFAR = \frac{\text{Mortgage bonds + Refin. loans}}{\text{Mortgages (>1y)}}$$

$$LCR = \frac{\text{Liquid assets}}{\text{Net outflows}}$$

$$NSFR = \frac{\text{Available stable funding}}{\text{Required stable funding}}$$

| Intro | Revisions | Current limits | Objective |
|---|---|---|---|
| **2012** | 2014, 2016, 2020 | **Min 100%** | Ensure stable, well-structured FX funding (FX NSFR), limit open FX position and improve FX maturity mismatch |
| **2016** | 2020, 2021 | **Min -30%, max +15%** | Curb open on-balance sheet FX position and off-balance sheet FX swaps (complements FFAR to tackle special banking models) |
| **2018** | 2020 | **Max 30%** | Limit excessive funding from FCs, and also ensure appropriate structure by disincentivising short term and/or FX funds |
| **2017** | 2018, 2019, 2020, 2021,2022, 2023 | **Min 25%** | Ensure long term mortgage-based funding and improve the mortgage bond market |
| **2015** | 2019 | **Min 100%** | Ensuring adequate quantity and quality of liquid assets in the event of a short-term (30-day) liquidity shock. |
| **2021** | - | **Min 100%** | Funding of assets with a sufficiently long term and in a stable structure, preventing the development of an excessive maturity mismatch between assets and liabilities. |



**National measures:** FFAR - Foreign exchange Funding Adequacy Ratio, FECR - Foreign Exchange Coverage Ratio, IFR - Interbank Funding Ratio, MFAR - Mortgage Funding Adequacy Ratio. **EU (Basel) measures:** LCR – Liquidity Coverage Ratio, NSFR – Net Stable Funding Ratio

# THE MNB HAS BEEN ACTIVELY USING BORROWER-BASED MEASURES SINCE 2015, WHICH SUPPORTS THE RESILIENCE OF HOUSEHOLDS

| | Hungarian BBMs (current calibration) | | | | European practice |
|---|---|---|---|---|---|
| | Category | HUF | EUR | Other FX | Various differentiation dimensions |
| DSTI (Debt-Service-to-Income ratio) | Monthly net income below HUF 600k* | 50% | 25% | 10% | ~50 % (min. 30%, max. 80%) |
| | Monthly net income at least HUF 600k* | 60% | 30% | 15% | |
| LTV (Loan-to-Value ratio) | Mortgages | 80% | 50% | 35% | ~85 % (min. 60%, max. 100%) |
| | Car loans | 75% | 45% | 30% | |

***DSTI limits for uncovered loans and mortgages with a maturity below 5 years***

| | Interest rate fixation period | | |
|---|---|---|---|
| | Variable or below 5 yr | At least 5 and below 10 yr | At least 10 yr |
| Net monthly income < HUF 600k | 25% | 35% | 50% |
| Net monthly income >= HUF 600k | 30% | 40% | 60% |

***DSTI limits pertaining to mortgages with a maturity of at least 5 years***

**Since January 2023**

**The MNB has the power to impose DTI/LTI** (Debt-to-Income/Loan-to-Income ratio) **limits to reduce possible circumvention options (currently not in use due to low levels of related risks)**

Note: For financial leasing, 5 percentage points higher LTV limits can be applied. Lower limits apply to foreign currency loans. Low-amount loans are exempted (de minimis threshold). *Approx. 1500 EUR.

# THE BANKING SECTOR FACES THE CURRENT FINANCIAL STABILITY CHALLENGES IN A MUCH MORE RESILIENT SHAPE

| Stability indicators | 2008 | 2023 |
|---|---|---|
| Liquid assets / Total assets | 10.0% | 29.7% |
| Loan-to-deposit ratio | 152% | 74.5% |
| Foreign funds / Total funds | 33.9% | 9.4% |
| Capital adeqacy ratio | 11.2% | 23.1% |
| (consolidated figures in parentheses) | (12.9%) | 19.3% |
| Ratio of loans over 90 days past due | 4.6% | 1.4% |
| Net 90+ NPL / Regulatory capital | 16.0% | 1.4% |
| RoE | 11.3% | 23.9% |
| Operating costs / Total assets | 2.4% | 1.7% |
| Share of FX loans: household loans | 66.3% | 0.3% |
| Share of variable-rate mortgages | 77.5% | 15.1% |
| Growth rate of corporate loans (y-o-y) | 6.5% | 6.0% |
| Growth rate of household loans (y-o-y) | 19.1% | 2.7% |

- **Banks now have more and better capital, more liquid assets and stable funding structures.**
- **National regulations such as Borrower-Based Measures** increase the resilience of banks and borrowers alike
- Bank also carried out **significant risk reduction** (e.g. NPL cleaning), resulting in a more resilient balance sheet.
- **Rigorous supervision** is key to maintaining the compliance of banks.
- The reform of the **crisis management frameworks** aims to foster prudent internal risk management framework.

***The evolution of the most relevant financial stability indicators in Hungary***

Source: MNB

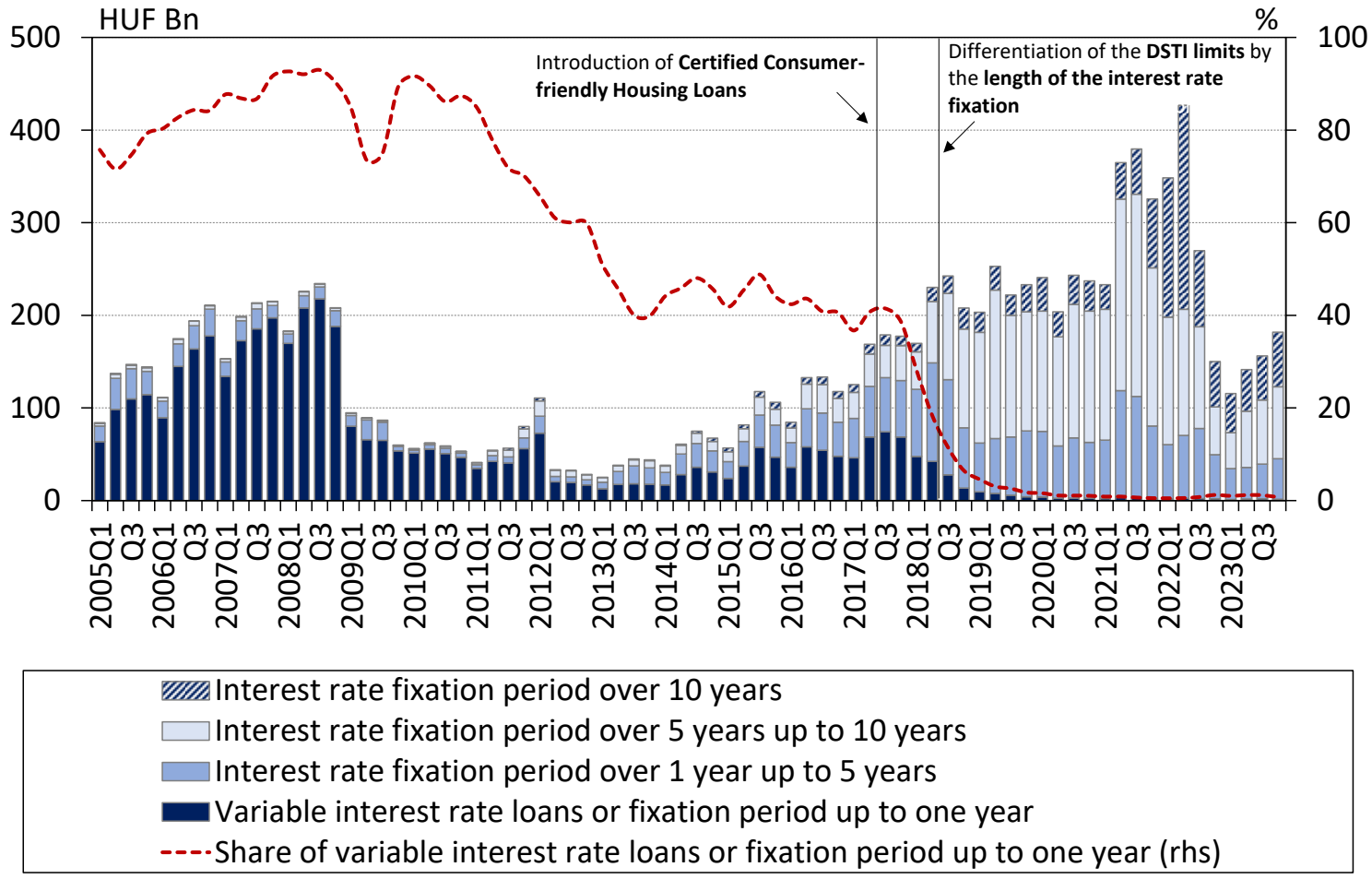
# THE LATEST INTERACTION BETWEEN THE TWO FIELDS: INTEREST RATE RISK

# FIXED RATE MORTGAGES HAVE A RANGE OF FINANCIAL STABILITY BENEFITS AND RELATED COSTS AS WELL

| Benefits | Costs |
|---|---|
| ▪ **Stable and predictable instalments, no interest rate risk exposure** (or limited in case of interest rate fixation periods) | ▪ In case of high interest rate environment, borrowers may get „stuck" for decades into their high interest rates → a **„frictionless" loan refinancing market is essential** |
| ▪ **Increases the shock resilience of households** → lower credit losses in the long term | ▪ **Requires interest rate risk hedging on the banks' side → developed stable funding and derivative markets** are a prerequisite |
| ▪ **Easier to understand and communicate** (consumer protection benefits) | ▪ **Interest rates of fixed-rate loans tend to be higher** than variable rate loans, due to the cost of interest rate hedging (in case of a normal rising yield curve) |
| ▪ **Potential lower risk premiums** of borrowers stemming from the stable debt service cost. | ▪ **Fixed-mortgage loans could decrease the efficiency of the interest rate channel of monetary transmission** → BUT: for small and open economies the **FX channel tends to be more important** |

Taking into account the financial stability benefits, which were particularly relevant in the low interest rate environment following the Global Financial Crisis, **in 2017 the MNB decided to shift the mortgage loan market towards longer interest rate fixation through numerous regulatory steps**

# PREVIOUSLY VARIABLE INTEREST RATE MORTGAGE LOANS PRONE TO INTEREST RATE RISK USED TO BE DOMINANT IN HUNGARY




***New housing loan disbursement by interest rate fixation periods until 2017***

- **Mortgage loans have longer maturities → they are more affected by** interest rate risk.
- **In 2017 60 percent** of the mortgages stock and **40 percent** of new mortgages were disbursed with variable interest rates.
- **A 5 pps interest rate shock** on a typical 20-year mortgage **could cause the instalments to surge by 50 percent** and increase the average DSTI (approx. 30%) by 15 percentage points.*
- **Borrowers are usually unable to assess** the potential impact of **interest rate risk**
- They **tend to extrapolate the interest rates on the basis of past developments** (particularly risky in low interest rate environment).
- They **tend to outweigh the importance of the initial instalments** over the total repayable amount



Note: *In case of a 15 million HUF mortgage loans, 20 years of maturity, HUF 300k monthly net income, 4.5% initial interest rate. Source: MNB.

# NUMEROUS MNB STEPS HAVE HELPED ALLEVIATE THE RISKS OF VARIABLE RATE MORTGAGE LOANS

**The MNB's regulatory steps limiting the interest rate risk of household mortgages**

**Borrower-based measures** | **Liquidity/funding measures** | **Supervisory measures** | **Other initiatives**


In June 2017, the so-called **Consumer-Friendly Housing Loans certification program** was launched, under which **only mortgage loans with interest rates fixed** for at least 5 (initially 3) years **can receive a consumer-friendly rating.**

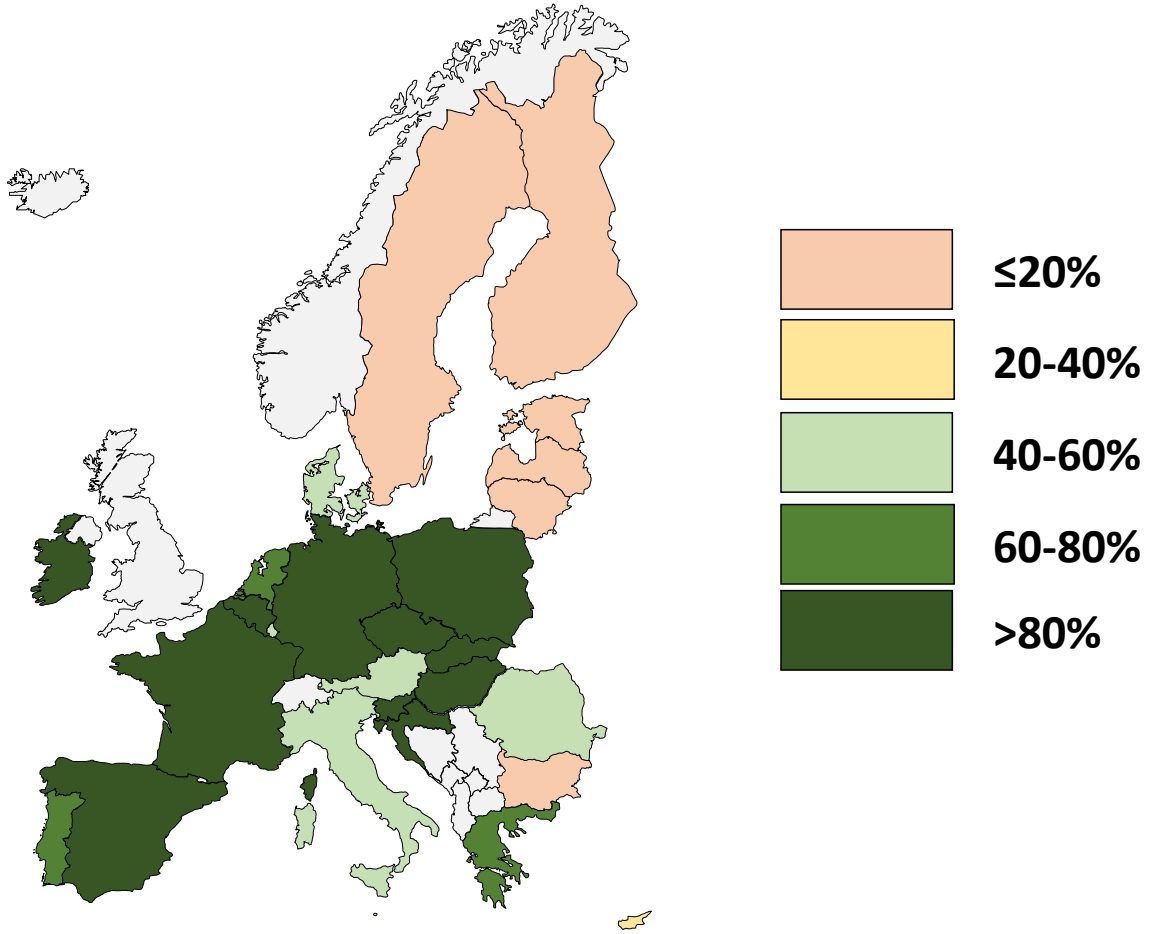
**BBMs were modified** in October 2018 to cover risks related to floating rate mortgage loans. According to the modification, **lower DSTI limits were set for mortgage loans with interest rate fixation periods shorter than 10 years.**

The MNB's **mortgage loan funding regulation (MFAR)**, together with the **mortgage bond purchase program**, helped to revitalize **the mortgage bond market and reduce the costs of longer-term funding**, thus supporting fixed-rate mortgage lending.

An **MNB recommendation** was issued to notify borrowers about the **risks of variable interest rate mortgage loans** and to **incentivise the refinance** of these mortgages with borrower-friendly conditions.

# FIXED INTEREST RATE LOANS HAVE BECOME WIDESPREAD IN HUNGARY – HOWEVER, THIS LEADS TO NEW CHALLENGES, AS WELL

## Fixed rate mortgages have become prominent in Hungary




**The share of loans with an interest rate fixation beyond one year in new lending (Dec 2023)**

## Current challenges

- Avoiding **getting "stuck" in high-interest fixed loans**
- **Supporting loan refinancing**
- Supporting **interest rate hedging of banks**



Note: *The stock data for 2017 also include loans with fixed interest rates beyond the year that will be repriced within the next 1-year. Source: ECB, MNB

# CURRENT DILEMMAS REGARDING MONETARY AND MACROPRUDENTIAL POLICY INTERACTIONS

# A RANGE OF MACROPRUDENTIAL INSTRUMENTS MAY REDUCE THE FINANCIAL STABILITY SIDE-EFFECTS OF MONETARY POLICY TIGHTENING

| Source of financial instability | Channel | Predicted effect on financial stability when ↑ r (↑ improves stability) | Tools to contain side effects |
|---|---|---|---|
| **Borrowing constraints** | Balance sheet | ↑ | Caps on LTI or DSTI ratio |
| | Default | ↓ | |
| **Risky behaviour of financial institutions** | Risk-taking | ↑ | Capital buffers, leverage ratio |
| | Risk-shifting | ↓ | Net stable funding ratio, capital buffers |
| **Externalities through aggregate prices** | Asset price | ↑ | Limits on LTV ratio |
| | Exchange rate | ↓ | FX reserve requirements, limits on FX lending, levy on FX non-core liabilities |

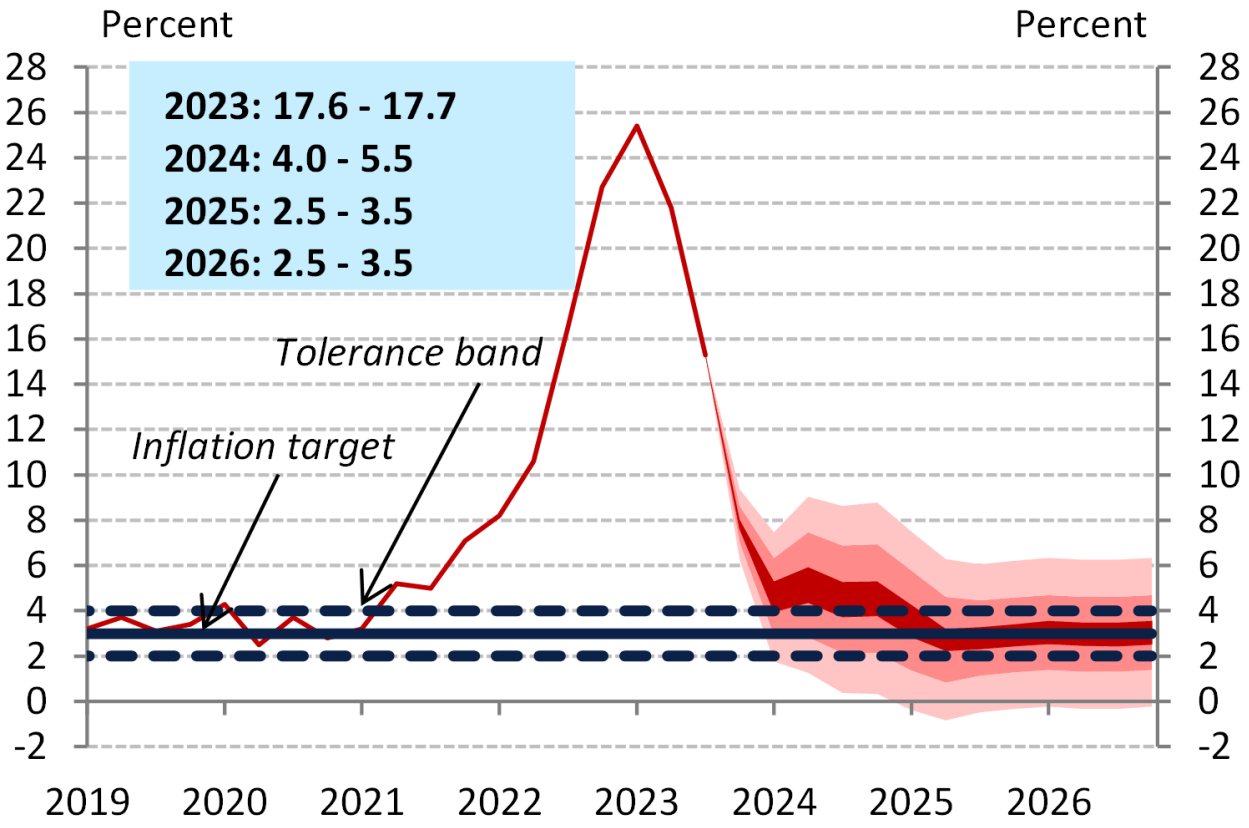
**A timely and proactive macroprudential approach could**

- **Strengthen the balance sheet** of borrowers and lenders as well
- Can **limit the interest rate exposures** of borrowers'
- Can **promote stable funding structures**

**This enables the monetary policy to achieve its price stability goals without prejudice to financial stability.**

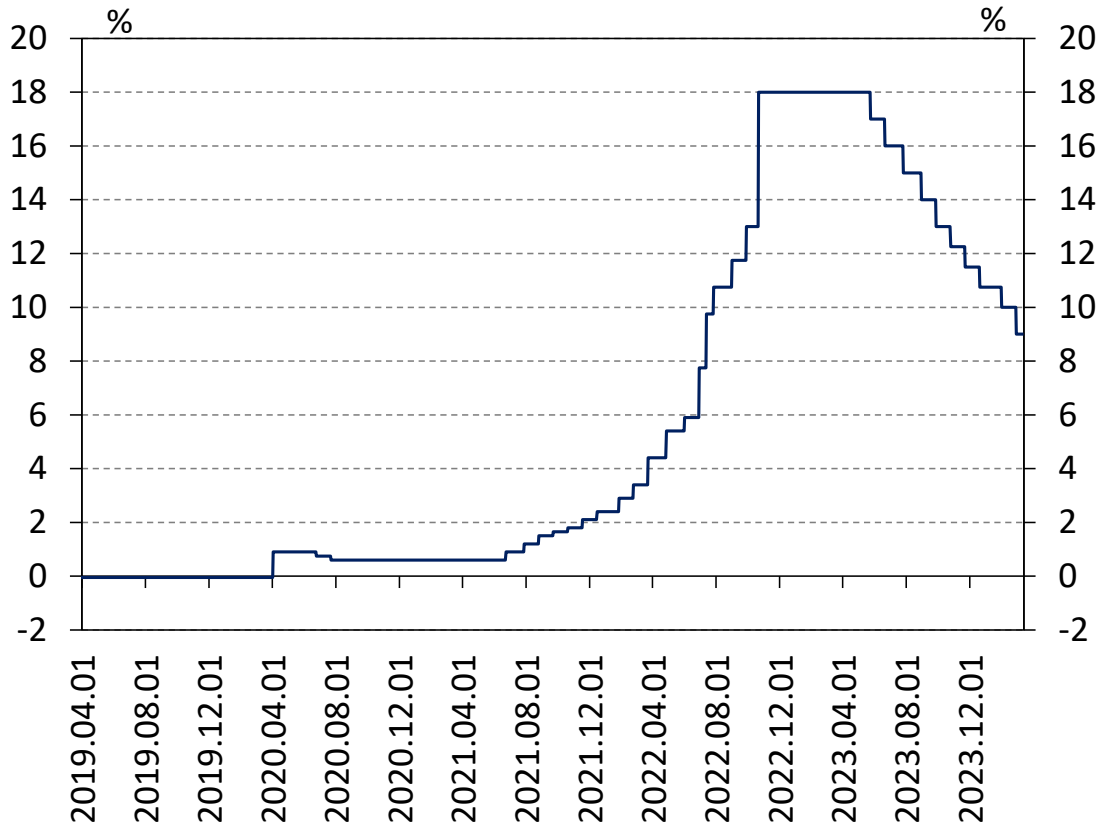
Source: IMF staff, BIS

# INFLATION PEAKED IN 2023 AND HAS RETURNED TO THE TOLERANCE BAND IN 2024, WHILE ECONOMIC GROWTH REMAINS LOW IN 2024




***Fan chart of the inflation forecast***

Note: Based on seasonally unadjusted data.

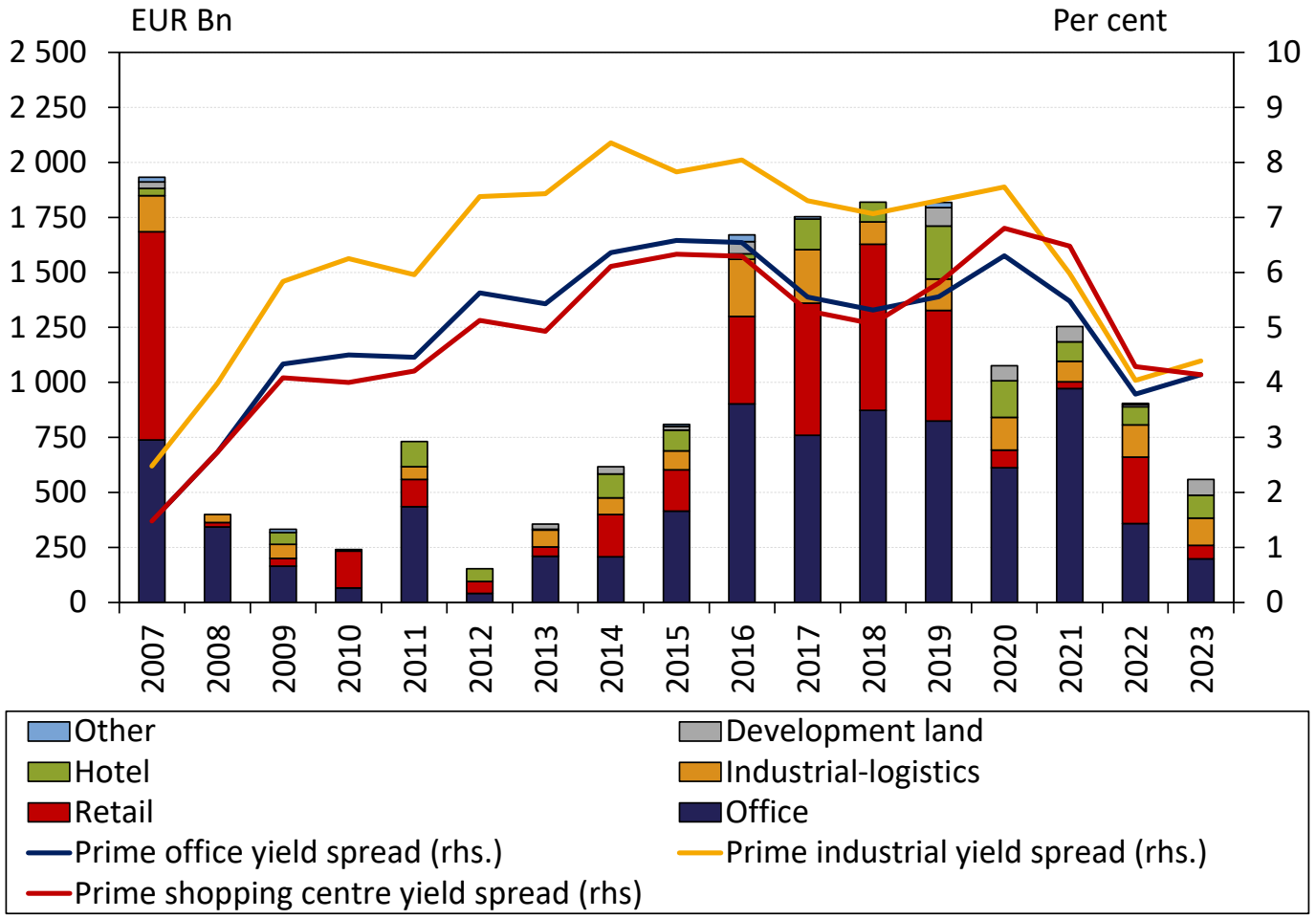



***Effective policy rate***

Note: Effective policy rate shows the O/N deposit rate until 1 April 2020, then the base rate untill 14 October 2021, then the O/N quick deposit tender untill September 2023, and then the base rate.

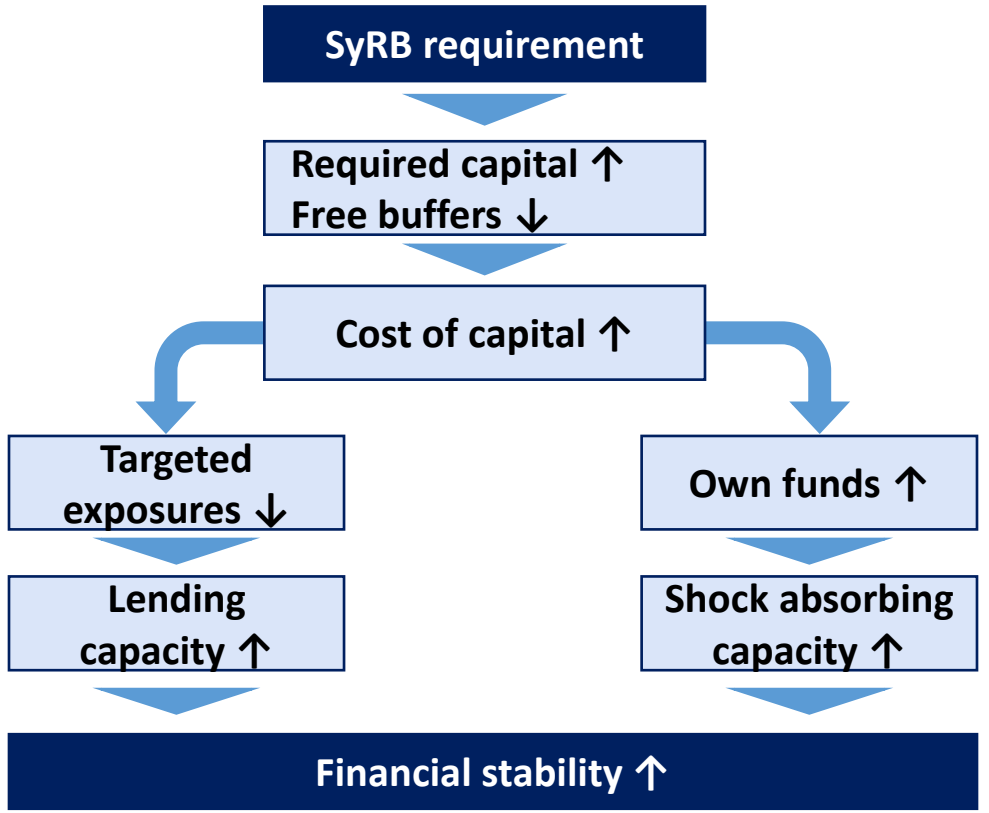
# DUE TO THE ELEVATED RISKS ON THE CRE MARKET, THE MNB DECIDED TO REACTIVATE THE SYRB FROM JULY 2024 IN A PROACTIVE MANNER

**Due to the monetary tightening, the premium of real estate investments above the risk-free return has shrunk significantly**



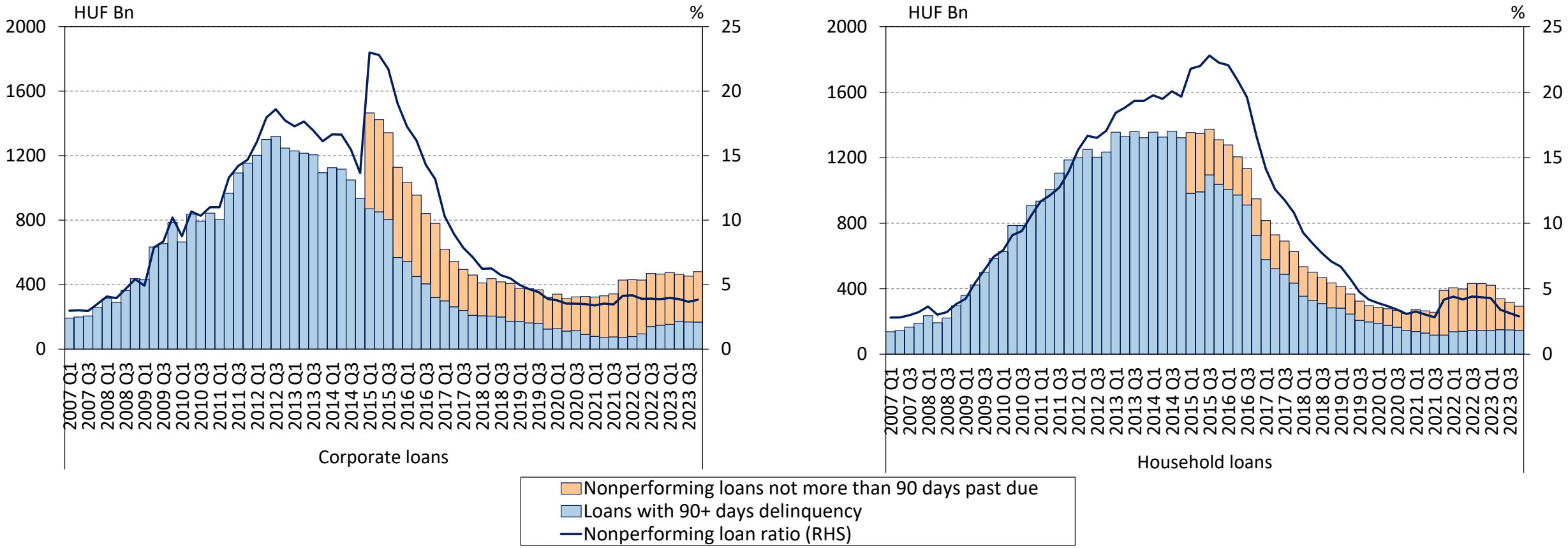

***The investment volume of the Hungarian commercial real estate market according to market segments and prime yield spreads***

- **Investment volume has decreased significantly**
- **In the Budapest office market, between Q2 2022 and Q4 2023, capital value decreased by nearly 21 percent**
- **The MNB decided to reactivate the SyRB requirement**




Note: Yield spreads were calculated based on 10-year euro bond yields.

# DESPITE THE WEAK MACROECONOMIC PERFORMANCE, ASSET QUALITY HAS REMAINED STABLE SO FAR




***Development of non-performing loans***

- **Due to the reclassification of loans that participated in the payment moratorium introduced during the COVID pandemic, the stock of non-performing loans temporarily increased slightly at the end of 2021.**
- **The Government shields households and SMEs from high interest rates with an interest rate cap on loans**

# THANK YOU FOR YOUR ATTENTION!