FINANCIAL STABILITY REPORT

2023

NOVEMBER

'...a nation is strong where property and independence are guarded by free hands.'

Ferenc Deák

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Financial stability is a state in which the financial system, including key financial markets and financial institutions, is capable of withstanding economic shocks and can fulfil its key functions smoothly, i.e. intermediating financial resources, managing financial risks and processing payment transactions.

The Magyar Nemzeti Bank's fundamental interest and joint responsibility with other government institutions is to maintain and promote the stability of the domestic financial system. The role of the Magyar Nemzeti Bank in the maintenance of financial stability is defined by Act CXXXIX of 2013 on the Magyar Nemzeti Bank.

Without prejudice to its primary objective of achieving and maintaining price stability, the MNB supports the maintenance of the stability of the financial intermediary system, the enhancement of its resilience and its sustainable contribution to economic growth; furthermore, the MNB supports the economic policy of the government using the instruments at its disposal.

The MNB establishes the macro-prudential policy for the stability of the entire system of financial intermediation, with the objective of enhancing the resilience of the financial intermediation system and ensuring its sustainable contribution to economic growth. To that end and within the limits specified in the Act, the MNB explores the business and economic risks threatening the system of financial intermediation as a whole and promotes the prevention of the development of systemic risks and the reduction or elimination of the evolved systemic risks; furthermore, in the event of disturbances to the credit market, it contributes to the balanced implementation of the function of the system of intermediation in financing the economy by stimulating lending and by restraining lending in the event of excessive credit outflow.

The primary objective of the Financial Stability Report is to inform stakeholders about topical issues related to financial stability, and thereby raise the risk awareness of those concerned as well as to maintain and strengthen confidence in the financial system. Accordingly, it is the Magyar Nemzeti Bank's intention to ensure the availability of the information needed for financial decisions, and thereby contribute to increasing the stability of the financial system as a whole.

The analyses in this Report were prepared by the Financial System Analysis Directorate, with the contribution of the Prudential and Consumer Protection Supervision of Money Market Institutions Executive Directorate, the Monetary Policy, Financial Market and Macrofinance Analysis Executive Directorate, and the Monetary Policy Instruments and Foreign Reserve Management Executive Directorate, under the general direction of Ádám Banai, Executive Director for Monetary Policy Instruments, Financial Stability and Foreign Reserve Management.

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The Report incorporates the Financial Stability Council's valuable comments and suggestions following its meetings on 3 October and 23 November 2023, and those of the Monetary Council following its meeting on 24 October 2023.

This Report is based on information for the period up to 30 October 2023. As data frequency is divergent, the analysis horizons may also differ.

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Executive Summary

The Hungarian banking system remained stable and its resilience to shocks is strong. Profitability is remarkably high, with interest income on central bank deposits as a significant contributing factor. Deposits by households and non-bank financial institutions in the banking system declined, although liquidity reserves of the sector remain ample. The loan-to-deposit ratio has risen from the levels seen in recent years, but is still at low levels. In line with international developments, both corporate and household lending have decelerated, credit dynamics may bottom out this year in both segments. The ratio of non-performing loans is low. The rate in the corporate segment stagnated and declined in the case of household loans, and thus overall, portfolio quality is good.

The international environment for European banks has been shaped by contrasting trends over the past six months. On the one hand, an uncertain demand environment, high inflation and slowing economic growth have led to a decline in lending. On the other hand, the restrictive monetary policies of central banks have materially increased banks' profitability through net interest income. The rising interest income is being at least partly absorbed by the state budget in the form of taxes and other measures in increasing number of countries, and several central banks have decided to exempt the reserve requirement from interest payments. With the continuation of disinflation, and thus with the expected normalisation of the interest rate environment, the current high profitability is expected to diminish, while – beside the fragile growth prospects – the correction of overvaluation in the real estate market has also emerged as a risk.

Looking at developments in the Hungarian real estate market, transactions in the housing market have declined significantly, mainly due to the unfavourable macroeconomic factors determining demand and the decline in home purchases realized with credit. As a result, for the first time in the last nine years, the annual rate of house price appreciation fell into negative territory in 2023 Q2, dropping to -0.8 per cent. As a result of this, housing market overvaluation eased in the last one year, but remains high. In the commercial real estate market, vacancy rates for both Budapest office and industrial-logistics properties increased in 2023 H1, but still cannot be considered high from a historical perspective. At the same time, investment turnover fell 60 per cent compared to the same half of the previous year, and capital values in the office market have fallen by 19 per cent over the past year, reflecting the rise in prime yields. Rising commercial real estate market risks are mitigated by credit institutions' moderate exposure in project loans.

The Hungarian banking system is stable and its resilience to shocks is strong. The sector has ample liquidity reserves. Beside low retail deposit rates and the competition-bolstering effect of the government's measures to enhance sovereign bond demand, the deposits of households and non-bank financial institutions have been further reduced in the banking system. The loan-to-deposit ratio has increased mainly due to deposit outflows, but the liquidity risks incurred are offset by the significant liquidity surplus at the sector level. The interest rates paid by the central bank make a significant contribution to maintaining liquidity buffers, as they increase banks' liquid assets in a way that translates into an increase in the low liquidity risk item on the liabilities side, i.e. equity through profit and loss. The capital adequacy of the banking system is also suitable, with the total capital adequacy ratio (CAR) unchanged at 18.8 per cent at the half-year to June 2023. Based on the results of the solvency stress test, even in the event of a severe stress event, there would still be only a negligible capital shortage at the sector level, so the liquidity and capital position of the banking system is still not a constraint on lending.

Profitability remains remarkably high, despite the impact of the extra profit tax and other government measures. In 2023 H1, domestic banks achieved a profit after tax of HUF 675 billion, marking the highest-ever full-year profit after tax of the sector in the 2000s. A significant contribution to this outstanding profitability came from interest income from the central bank, which increased by HUF 627 billion compared to the same period last year. The negative profit impact of impairments decreased versus 2022, a base effect – the impairment of domestic banks' interests in Russia and Ukraine in March 2022 – playing a significant role in this improvement. Together, these resulted in a 12-month rolling return on equity (RoE) of 17 per cent and a return on assets (RoA) of 1.3 per cent at the end of 2023 H1. However, this level of profitability is not sustainable over the medium term. As the base rate of the central bank lowers in parallel

with the disinflation and the improvement of the risk environment, net interest income is expected to decline, after which efficiency gains and deepening credit penetration could again be the main sources of profitability in the sector. From the standpoint of the future development of banks' capital adequacy and lending capacity, it is extremely important for institutions' dividend payment policy – in view of the expected decrease in profitability – to remain conservative and for this year's exceptionally high profit to largely serve the expansion of bank reserves.

Looking ahead, we can identify factors contributing to the increase in credit risks in some segments of the loan portfolio: SME and mortgage loans subject to interest rate caps, project loans financing commercial real estate and state-subsidised loans, if the related child-bearing conditions are not met. However, the materialisation of these risks is not currently visible. The non-performing loan ratio in the corporate segment has not changed substantially since mid-2022 (with a slow increase in loans over 90 days past due) and stood at 3.7 per cent in August. The ratio for household loans actually fell in 2023 H1 due to a technical effect following the end of the moratorium, and then declined further in August to reach 3.2 per cent. Overall, in 2024–2025, in addition to the decline in interest income, the increase in credit risks is also pointing towards a decline in banks' profits.

The annual growth rates of corporate loans and household loans outstanding decelerated to 5.4 per cent and 2.8 per cent, respectively, in September 2023, in line with international trends. Annual credit dynamics are forecast to bottom out this year in both segments. According to banks, demand for long-term corporate loans has weakened further. Looking ahead, demand is expected to pick up, but corporate financing needs could be eased by the sector's high stock of liquid assets, amounting to around 30 per cent of GDP. The volume of new household loan contracts fell by around 21 per cent in 2023 Q3 versus the same prior-year period. The decline in housing loans was even larger, at 41 per cent, with the fall in subsidised loans playing a role alongside the decline in market-based loans. The fall in the activity of customers taking out exclusively subsidised loans suggests that demand in the credit market is being strongly shaped by factors other than the interest rate environment as well, such as economic uncertainty, falling real wages and deteriorating consumer confidence. The repricing of loans issued in a low interest rate environment and the persistence of high repayment burdens on loans issued at high interest rates, even after the yield environment will have declined, highlight the importance of loan refinancing in the future.

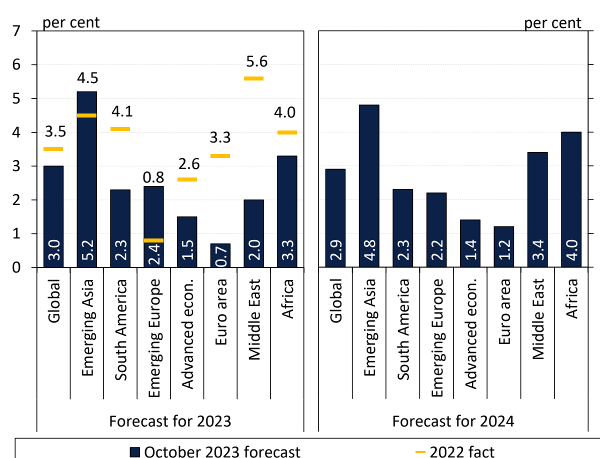
1. International environment: inflation on a downward path, but growth prospects are fragile

At the global level, prospects for growth have continued to deteriorate over the past six months. Weaker inflationary pressure from commodity and food prices and sharp increases in base rates have broken the upward trend in inflation, but the higher interest rates are continuing to dampen GDP growth in Europe. However, the current level of inflation is still above what central banks consider tolerable, and thus reducing the pace of price rises remains a priority. The interest rate path of the major global central banks may peak this year, while some central banks in emerging markets have already started to cut interest rates in response to falling inflation. Risks related to energy supply uncertainties have eased significantly, while geopolitical risks have increased further, which could again cause turbulence in energy prices.

The downside risks to global growth prospects, the higher interest rate environment and fallout from the financial turbulence following the US bank failures in the spring hit the European banking system in a prepared state, also thanks to a tighter macro-prudential regulatory environment. While the bank failures had a milder impact on the valuations of European banks compared to their US peers, a growing number of EU governments are diverting a portion of the sector's rising interest income through taxes and other measures. Falling lending and deposit outflows in some countries also represent growing risks to the EU banking system. The banking sector is facing a double challenge from the real estate sector: on the one hand, nominal house prices have started to decline, particularly in housing markets which were previously characterised by significant overvaluation, increasing bank risks through a decline in the value of mortgage collateral, and on the other hand, the value of commercial real estate is easing due to falling cyclical and structural demand. The European banking system is currently enjoying increasing profitability and has substantial reserves to meet the challenge of a very adverse economic downturn.

1.1. Weakening global growth outlook amid declining, but still high inflation

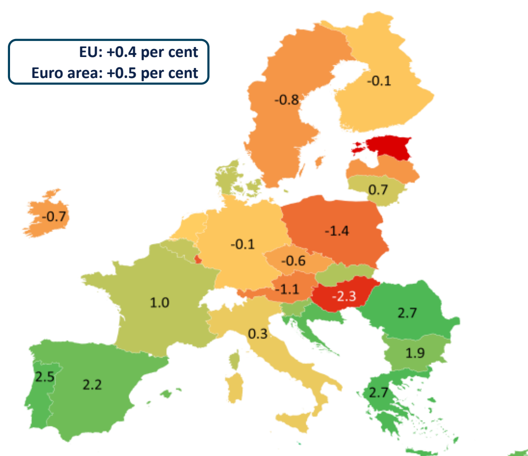
Chart 1: IMF forecast for real GDP growth in 2023 and 2024



Source: IMF

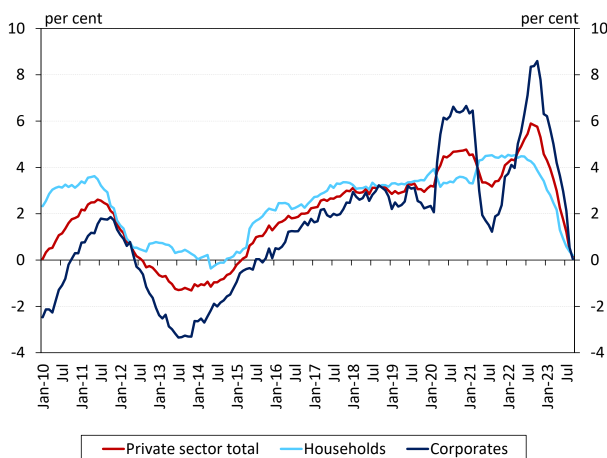
High inflation, rising interest rates and geopolitical tensions have further eroded global growth prospects. In 2023, global GDP growth is expected to be 0.5 percentage point lower than last year's 3.5 per cent pace, according to the latest International Monetary Fund (IMF) forecast in October. The slowdown in the pace of global economic growth was exacerbated by the weaker-than-expected performance of the Chinese economy after the lifting of lockdowns due to the COVID-19 pandemic. However, the moderation in food and commodity prices and the unwinding of global supply chain tensions were positive developments. In July, the IMF revised its forecast for the global real GDP growth in 2023 downwards to 3.0 per cent from the 3.2 per cent expected in October 2022. In their October 2023 forecast, only the emerging Asia and emerging Europe regions are expected to grow faster this year than last year, while the outlook for other regions, including developed countries, has deteriorated substantially. Looking ahead, the projections for 2024 also show no significant expansion, with global growth expected to be just 2.9 per cent (Chart 1). On the positive side, however, the euro area is expected to see stronger

Chart 2: Annual growth rate of real GDP in EU Member States



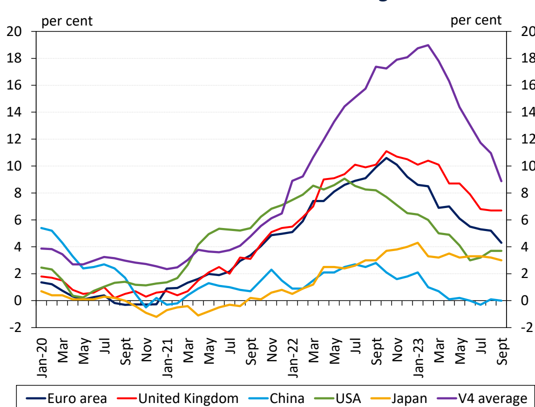
Note: Annual change expressed as a percentage Q2 2023 data. Seasonally and calendar adjusted data. Source: Eurostat, HSCO

Chart 3: Annual growth rate of private sector credit in the European Union



Note: Transaction-based annual growth rates. Source: ECB

Chart 4: Development of the consumer price index in selected countries and regions



Note: V4 average means the unweighted average for Hungary, Slovakia, Czechia, and Poland. Source: OECD, ONS

economic growth in 2024 than in 2023.

Growth in the EU economies in the first half of the year was below expectations, mainly due to low domestic demand. The economic performance of the EU countries this year has been mixed and below expectations on the whole (Chart 2). In 2023 Q2, the EU economy grew by only 0.4 per cent on an annual basis, while the German economy suffered a minimal contraction. One of the main factors contributing to the poor growth outlook is high inflation, the associated tight monetary conditions and weak domestic demand due to falling real wages. At the same time, the EU also cannot rely on external demand to boost growth this year, given the deteriorating global growth outlook and stagnating world trade flows.

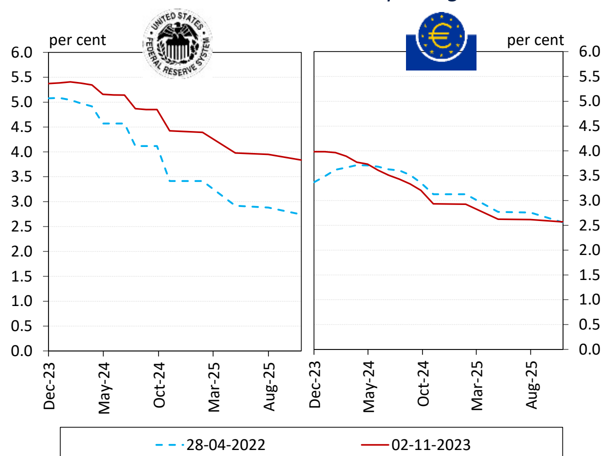
The effects of the uncertain economic outlook, high inflation and tight monetary conditions are also reflected in a slowdown in lending. In the current economic environment, a substantial proportion of EU companies are postponing investment decisions, and the public is taking out significantly fewer mortgage loans. According to the European Central Bank's Lending Survey, a record 42 per cent of euro area banks reported a fall in demand for corporate loans in Q2.[1] Weakening demand has led to a steady decline in private sector borrowing in recent months, continuing to point to subdued economic growth (Chart 3).

Globally, the inflation trend has broken, but the rate of price increases remains high. The moderation in commodity and food prices, as well as in the price of natural gas, has had a positive impact on inflation developments, with most economies experiencing a spectacular fall in the pace of price rises (Chart 4). The decomposition of euro area inflation into components shows that the main driver of inflation is no longer the rise in energy or food prices, but rather increases in services prices. However, the current level of inflation is still higher than central banks consider tolerable, and therefore the priority remains to reduce the pace of price increases. At the same time, higher oil prices due to production cuts and the Palestinian-Israeli conflict pose upside inflation risks globally, while in Europe any disturbance to natural gas supplies (disruption of supplies, strikes) or a colder winter could lead to another energy price shock.

The leading central banks continued to respond to price increases above inflation targets by tightening monetary

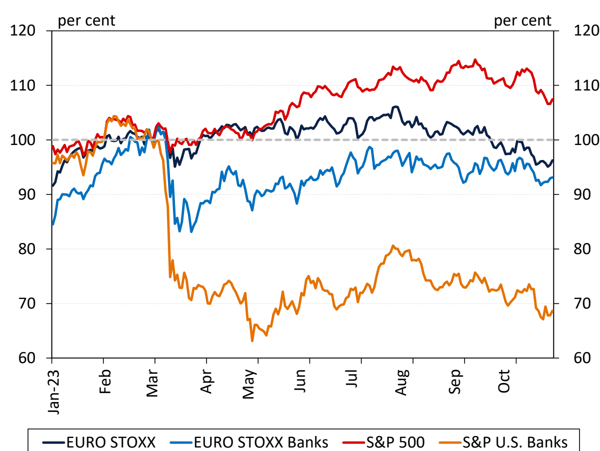
[1] ECB (2023): The euro bank lending survey – Second quarter of 2023. European Central Bank.

Chart 5: Expected interest rate paths for the Fed and ECB based on market pricing



Note: Expected interest rate paths are based on interest rate swaps in the case of the Fed and EONIA forward yields for the ECB. Source: Bloomberg

Chart 6: Performance of European and US equity and banking indices



Note: 1 March 2023 = 100 per cent. Calculated from the time series in euro. Source: Yahoo Finance

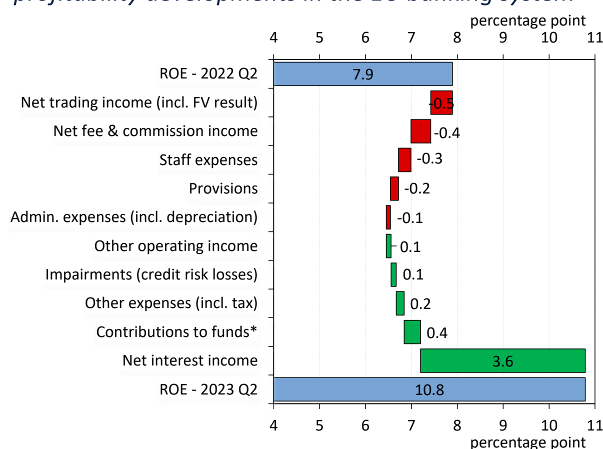
policy. In 2023 H2, leading central banks implemented stronger monetary tightening than the market had anticipated. The Fed raised its policy rate by 25 basis points in July 2023 and did not change it in September and November, leaving it currently in the range of 5.25–5.5 per cent. According to the Fed, one more rate hike is possible this year and only two rate cuts are planned for next year, which is a significant change from previous expectations (Chart 5). The European Central Bank raised its policy rate by 25 basis point in both July and September, bringing the euro area policy rate to 4 per cent. This marked the end of the cycle of rate hikes according to both market interest rate expectations and ECB communications, but the euro area consumer price index is still above the inflation target (2 per cent). The ECB's future monetary policy decisions will be based on three criteria: the inflation outlook, the dynamics of underlying inflation and the strength of monetary policy transmission. Overall, the leading central banks believe that the current monetary conditions, if maintained for a sufficiently long period, will help to achieve the objectives. However, in a disinflationary environment, some emerging market central banks (Brazil, Poland, Hungary) have already started to cut policy rates, while others continue to wait.

1.2. The resilience of the European banking system remains stable in the face of mounting economic and structural risks

The EU banking system successfully handled the market turbulence in the wake of the US bank failures. In spring 2023, the US bank failures and the forced merger of the major Swiss banks tested the effectiveness of regulatory systems and the stability of financial sectors worldwide. The EU's prudential regulation proved to be successful, as the European banking system was hit by severe monetary tightening and US bank failures with substantial liquid reserves, and thus market confidence was regained in a relatively short period of time. The US banking system is on a different path, with the US banking index still significantly below its pre-March level (Chart 6). However, the valuation of European banks (share price to book value) is still lower than that of US banks. This may reflect structural problems (e.g. lower cost efficiency) or fears about the sustainability of profitability, such as new bank taxes, deteriorating asset quality or higher financing costs.

Thanks to higher interest income, the profitability of the EU's banking system has improved significantly. The annualised ROE of the EU banking system rose from 7.9 per

Chart 7: Impact of changes in factors contributing to profitability developments in the EU banking system



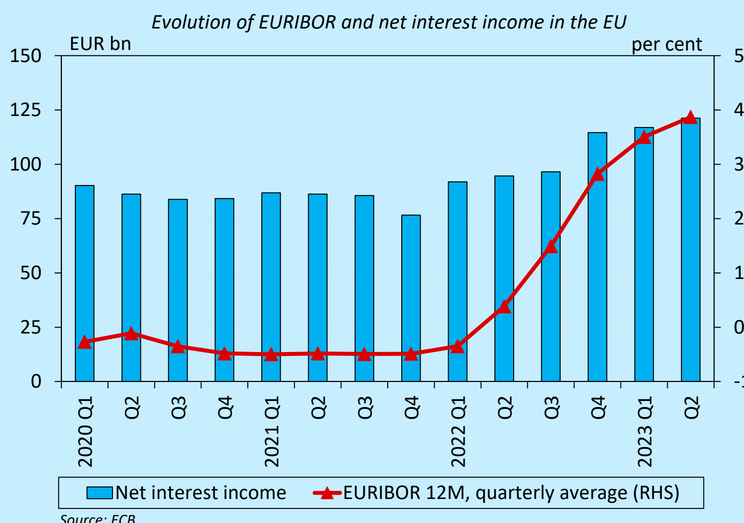
Note: *Contributions to deposit guarantee schemes and resolution funds. Source: EBA

cent in 2022 Q2 to 10.8 per cent in 2023 Q2 (Chart 7). The year-on-year increase in ROE was largely attributable to the expansion of net interest income, which increased from 17.9 per cent to 21.5 per cent as a share of equity. However, the lower level of net trading income reduced the return on equity ratio by 0.5 percentage point, and the decreasing net fee and commission income by 0.4 percentage point. Contributions to deposit guarantee schemes and resolution funds fell short of last year's high level caused by extraordinary measures, which helped ROE improve by 0.4 percentage point. At the same time, a part of the banks' historically high profits is being diverted by governments to cover their increased expenses, while several central banks have opted for making the reserve requirements interest-free, which also reduces banks' profits (see Box 1).

BOX 1: THE IMPACT OF MONETARY AND FISCAL POLICY MEASURES ON THE PROFITABILITY OF EUROPEAN BANKS

The coronavirus epidemic, followed by the Russian-Ukrainian war, led to a surge in inflation, and European central banks have responded with sharp interest rate hikes since 2021. **The higher interest rate environment has led to significant earnings improvements in the banking sector**, as lending rates have risen faster than deposit rates and the increased liquidity in the banking system during the crisis management has led to higher interest income for banks, resulting in a significant improvement in their net interest income.

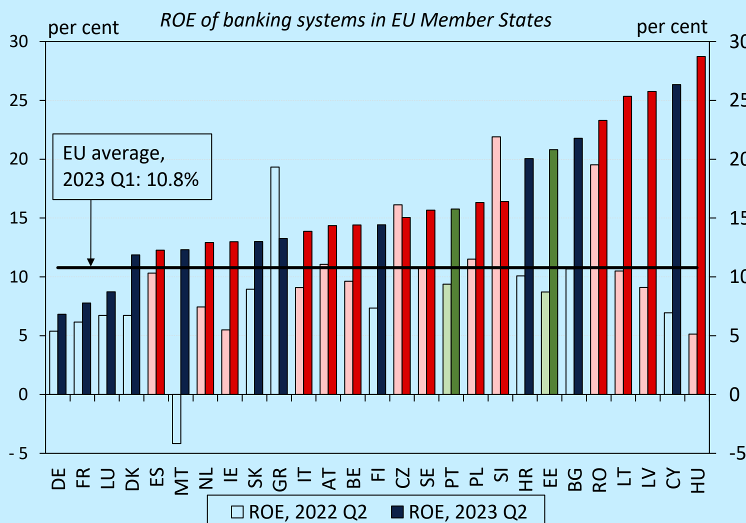
Evolution of EURIBOR and net interest income in the EU



Source: ECB

Governments increasingly view banks' profits over and above the normal (average) profit as an extra profit from the high interest rate environment and are imposing **additional taxes on the extra income generated**. Such taxes were introduced in Czechia, Spain and Hungary from 2022 and in Lithuania from mid-2023. In recent months, Italy, Latvia, Slovenia and Romania have also decided to impose a special tax on bank income, while Belgium, Ireland and the Netherlands have increased bank tax rates, and Estonia plans to increase the corporate tax on banks from 2025. In Portugal, an interest rate cap was introduced for two years this year, while in Austria banks have voluntarily agreed not to charge default interest and other fees on loans taken out to buy owner-occupied housing for the next year.

Italy is the largest economy among the EU Member States that has imposed a bank tax so far; banks in Italy recorded a 50-per cent increase in interest income in 2022 compared to the previous year, well above the European banking sector average of 20 per cent. The main reason is that, compared to the EU average, Italy has a high ratio of variable rate loans that are repriced due to the interest rate hikes. **The Italian government may collect revenue of EUR 3 billion from the new tax introduced in response to the surge in bank profits.** Almost two thirds of the new tax will be borne by the two largest Italian banks, which are also present in Hungary through their subsidiaries.



Note: Countries that have introduced or plan to introduce an extra profit tax are highlighted in red. Highlighted in green are countries that otherwise reduce the extra income of banks. Source: EBA

The ECB has expressed concerns over the introduction of the Italian bank tax without consultation, pointing out that **the drain on bank profits could reduce banks' resilience to shocks, make it difficult to build up adequate capital buffers and also limit banks' ability to lend to economic agents**.

Extra profit and solidarity taxes in the EU introduced since 2020 or planned

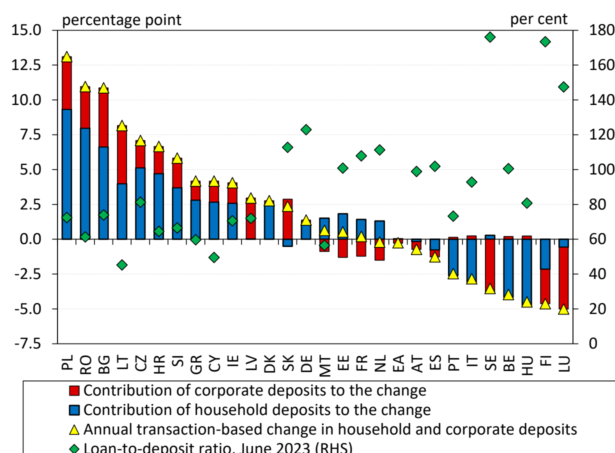
Country	Current state of play	Description of tax/levy
Czechia	As of 2024	60% tax surcharge on excess profit. Applies for banks with >6bn CZK NII
Hungary	As of 2022	The base for extra profit tax in 2022 and the first half of 2023 was approximately the net interest income and fee and commission income of banks, which was then modified to adjusted profit after tax. The tax will still be due in 2024, but the amount payable may be reduced in line with the increase in banks' holdings of government securities.
Spain	As of 2023	4.8% on banks' NII and net commissions above EUR 800m (2023 and 2024)
Sweden	As of 2022	5-6bp on liabilities of banks >EUR 15bn
Belgium	As of 2023	Increase in deposit guarantee contributions (EUR 150m in total) and removing the tax deductibility
The Netherlands	As of 2023	70% increase in bank levy and a new tax on share buybacks (applicable for all listed companies)
Lithuania	As of 2023	60% tax on NII that is 50% above 4-year average
Italy	As of 2023	0.26% of their risk-weighted assets on individual basis. Possibility to redeem the tax if the bank increases its reserves.
Latvia	Under consideration	For institutions with at least EUR 400m deposits, additional tax on NII that is 50% above 4-year average
Estonia	Under consideration	18% of net profit (different from other companies)
Romania	Under consideration	1% of banks' turnover (calculated as the sum of gross interest income with fee income), 2% in the first two years
Slovenia	Under consideration	0.2% of total assets
Ireland	As of 2014 (increasing as of 2024)	Deposit interest retention tax (DIRT) (increase to EUR 200m)

Source: EBA, MNB collection

The ECB's decision to stop paying interest on its reserve requirements from 20 September 2023 will have an impact on the profitability of euro area banks and contribute to achieving the monetary policy objectives more effectively. According to June 2023 data, the ECB's reserve requirement amounted to around EUR 165 billion, on which banks received a deposit facility rate (DFR) of 3.75 per cent, amounting to around EUR 6 billion per year. The net interest income of euro area banks **could reach EUR 400 billion by the end of 2023, of which the loss of interest paid on reserve requirements would amount to only 1.5-2.0 per cent per year**. The ECB's action will therefore have no material impact on bank liquidity and financial stability but will reduce the costs of monetary transmission. **Following the ECB's move, the Czech National Bank also decided in September to stop paying interest on reserve requirements from 5 October.** The measure could reduce Czech banks' profits by EUR 85-90 million this year and by EUR 265-270 million in 2024 (3.5 per cent of net interest income in 2022 and 6.5 per cent of net profit after tax). The move aims to lower the cost of monetary policy implementation for the Czech central bank while preserving its efficiency. Among the non-EU European countries, Switzerland took a similar decision at the end of October, with the central bank no longer paying

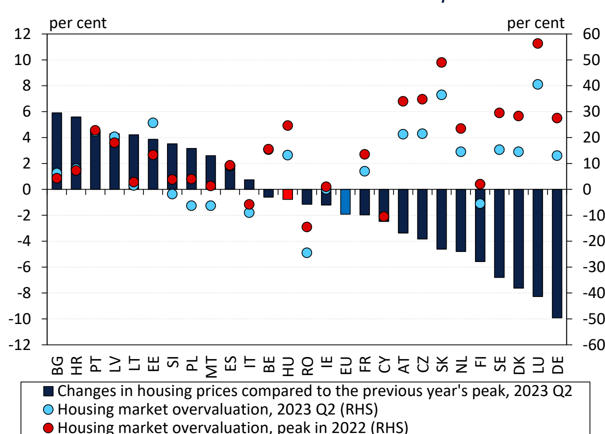
interest on its reserve requirement from December, saving around CHF 700 million annually. **Under the minimum reserve system, the MNB has not paid interest on the amount equivalent to 25 per cent of the minimum reserve requirement since April 2023.**[2] In Hungary, the minimum reserve requirement has been set at 10 per cent of the liabilities subject to reserve requirements.

Chart 8: Annual change in deposits in EU Member States



Note: Transaction-based change between September 2022 and September 2023 for euro area countries and between August 2022 and August 2023 for non-euro area countries. Source: ECB, EBA

Chart 9: Housing market overvaluation and changes in nominal residential real estate prices



Source: ECB, Eurostat, MNB

Banking systems in some EU Member States have recorded deposit outflows over the past year. In September 2023, the bank deposits of non-financial corporations and households decreased by 0.3 per cent year-on-year in the euro area, as a result of a 1.1-per cent outflow of corporate deposits and stagnation in household deposits (Chart 8). The largest outflows of private sector deposits occurred in Luxembourg (-5.0 per cent), but their share also fell in Finland and Sweden, which have the highest loan-to-deposit ratios. The largest decline in household deposits was seen in Hungary, driven by high inflation and the significant interest rate advantage of government securities for households.[3] Between June 2021 and July 2023, in the EU Member States, the median transmission between the change in short-term interbank interest rates and the average interest rates of new term deposits was 77 per cent for corporate deposits and 73 per cent for household deposits.[4] However, the Member States that experienced the largest deposit outflows were not the ones with subdued repricing of deposit rates, as outflows were mostly driven by other factors (e.g. wide availability of products offering higher returns, increased instalments).

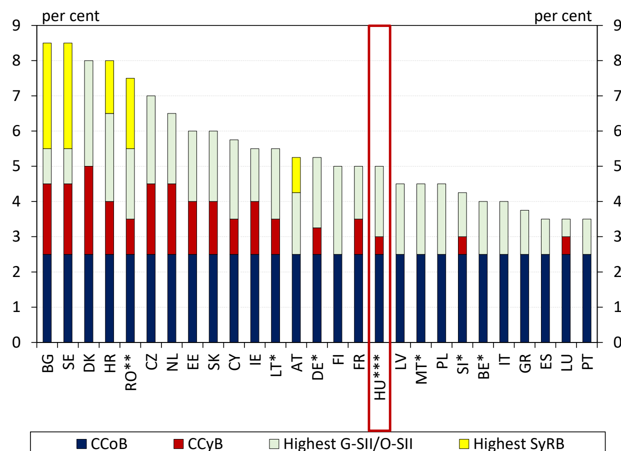
Given the level of overvaluation in the housing market, the correction in housing prices may yet continue. In most EU Member States, nominal house prices started to fall in 2022 H2 or early 2023, with a significant decline mainly in countries that had previously experienced significant housing market overvaluation above 25 per cent (Chart 9). The largest nominal house price decline of 10 per cent in comparison to the peak in 2022 was recorded in Germany. Housing market overvaluation has thus moderated in the countries experiencing a decrease in house prices, but is still typically around 13–26 per cent in many Member States. Therefore, given the uncertain economic prospects and still high average lending rates, further housing price corrections may occur. A further

[2] Press release on the Monetary Council meeting of 28 February 2023.

[3] See Chapter 7 for more details.

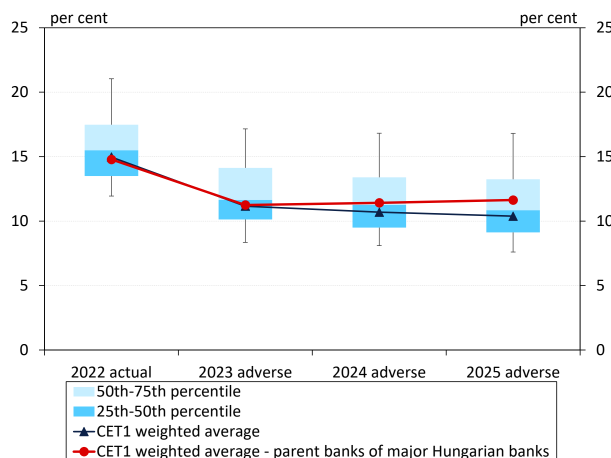
[4] Since interest rates on household deposits could not fall below 0 per cent, we only took into account the rate of change in the reference interest rates in the range above 0 per cent.

Chart 10: Capital buffer requirements for EU countries



Note: Buffers announced by 6 November 2023. CCoB: Capital Conservation Buffer; CCyB: Countercyclical Capital Buffer; GSII/OSII: Systemically Important Institutions' Capital Buffer; SyRB: Systemic Risk Buffer. *Sectoral SyRB. **In Romania, the highest capital buffer imposed on a bank is currently 6 per cent. ***A CRE-related SyRB has already been announced, but the rates will only be decided upon in 2024 Q2. Source: ESRB, websites of national authorities

Chart 11: Evolution of the CET1 capital ratio in the adverse scenario



Note: TheCET1 calculation taking into account all reported capital requirements that will become effective over the time horizon under consideration. Vertical line: 5th-95th percentile range. Source: EBA, 2023 EU-wide Stress Test

decline in European house prices would imply a depreciation of residential mortgage collateral. From a banking perspective, in addition to residential real estate, a decline in commercial real estate valuations could also pose a risk due to declining cyclical and structural demand (the spread of online shopping habits and teleworking).[5]

Most EU countries have increased their capital buffers, in some cases by introducing sectoral buffers. By early November 2023, 17 Member States had already announced the introduction of a positive countercyclical capital buffer (CCyB) rate to manage deepening systemic risks (Chart 10). Some countries are also using a systemic risk buffer (SyRB) to strengthen resilience to shocks from vulnerabilities concentrated in specific segments. To address risks stemming from the housing market, some Member States (Belgium, Germany, Latvia, Malta and Slovenia) have introduced dedicated sectoral systemic risk capital buffers for housing loans. European banking systems are facing the challenges with strong capital positions and sound fundamentals, and the announced capital buffers provide additional flexibility in the event of risks materialising.

The EU banking system has sufficient capital to withstand severe economic shocks. In its latest stress test of 70 large European banks,[6] the EBA assumed a more severe cumulative GDP contraction of 6 per cent over three years than in previous stress tests, as well as persistently high inflation and interest rates and a significant fall in housing and commercial property prices. They estimate that the average ratio of Common Equity Tier 1 capital (CET1) to risk-weighted assets would decline from 15.0 per cent in 2022 to 10.4 per cent in 2025 in the stress scenario (Chart 11). The same average for the parent banks of the largest banks in Hungary would fall to 11.6 per cent by 2025, 125 basis points higher than the average for the banks examined. In the adverse economic environment, the increase in net interest income offsets the increase in administrative expenses, while credit risk losses alone are responsible for a 405-basis point decline in the CET1 ratio. The results show that the EU banking system would remain resilient to very adverse economic events.

[5] The impact of working from home on the office market is discussed in more detail in Box 1 of the MNB Commercial Real Estate Market Report – October 2023.

[6] Source: EBA, 2023 EU-wide Stress Test.

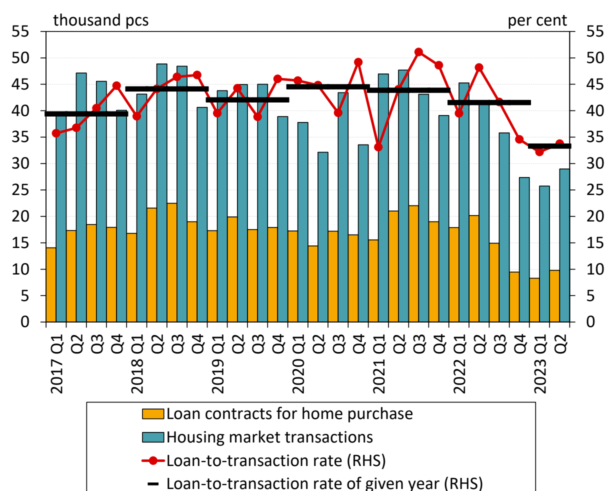
2. Real estate markets: low market activity, with moderate risks for banks

Housing market activity was subdued in 2023 H1, with the number of transactions in the second quarter being about one third lower than in the same period of the previous year. This decline was mainly due to a fall in credit-financed housing transactions. The share of credit-financed home purchases fell to 34 per cent from 48 per cent one year earlier. This was due to the uncertain economic outlook, falling real wages and tighter monetary conditions as a result of inflation. Due to the weak market activity, the annual growth rate of nominal house prices declined to -0.8 per cent in 2023 Q2, moving into negative territory first time in nine years. Housing prices in villages fell in substantially on an annual basis, but banks typically did not provide mortgages with high LTV ratios in small settlements. As real house prices decreased due to high inflation, the overvaluation of the housing market eased at the end of 2022, but it remains high compared to previous years.

In 2023 H1, the vacancy rate of Budapest office and industrial-logistics properties also increased. The rise in rates in both markets was driven by the substantial volume of new completions and low demand, but the levels are not high by historical standards. Investment turnover in the commercial real estate (CRE) market was 60 per cent lower in 2023 H1 than in the same prior-year period, and the rise in prime yields has led to a 19-per cent year-on-year fall in capital values in the office market. In the face of mounting real estate market risks, the exposure of credit institutions to the real estate market through project lending is moderate, and in the coming years low renewal risk can be expected for the CRE project loan portfolio.

2.1. Overvaluation eased as the number of transactions fell, but remains high

Chart 12: Ratio of loans taken out for home purchase and housing market transactions

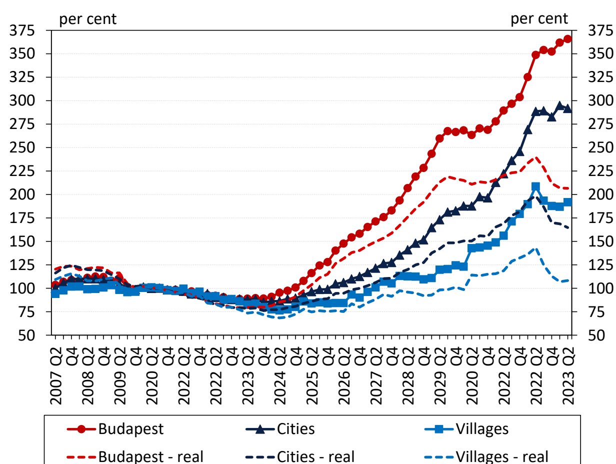


Source: MNB

One significant factor in the decline in the number of transactions in the housing market is the drop in mortgage lending. In 2023 H1, 55,000 housing transactions were recorded nationally, down 37 per cent year on year. One significant factor in the decline in the number of sales was the fall in loans taken out for home purchase: the 18,000 transactions involving mortgage loans in the period under review represent a year-on-year decline of 53 per cent, with the largest fall of around 78 per cent seen in loans for purchasing new homes. By contrast, the number of homes purchased without a mortgage loan fell by one quarter in the same period. As a result, the share of housing transactions financed with credit was 34 per cent in 2023 Q2, compared to 48 per cent one year earlier (Chart 12). The decline in the number of housing transactions was also due to the uncertain economic outlook, falling real wages and increasingly tight monetary conditions as a result of high inflation.

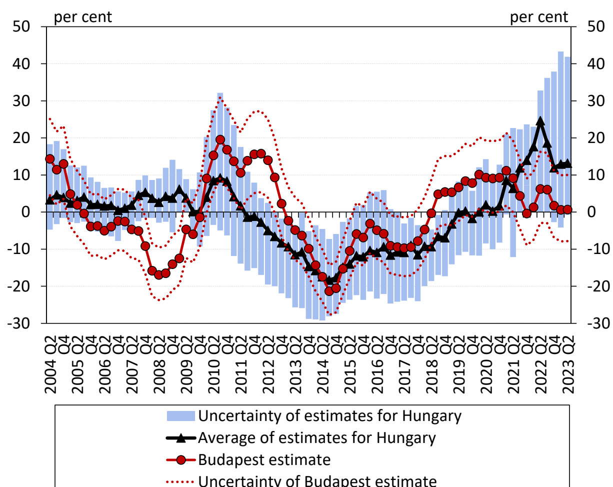
Annual house price dynamics continued to decelerate in 2023. According to the MNB house price index, following the decline in house prices in 2022 H2, house prices rose again in 2023 Q1 and Q2 at the national level by 2.6 per cent and 0.5 per cent, respectively. However, annual house price dynamics became negative for the first time in nine

Chart 13: Nominal and real MNB house price indices by settlement type (2010 = 100 per cent)



Note: The real price index is obtained by deflating the nominal indices with the consumer price index. Source: MNB

Chart 14: Deviation of house prices from the estimated equilibrium level justified by fundamentals



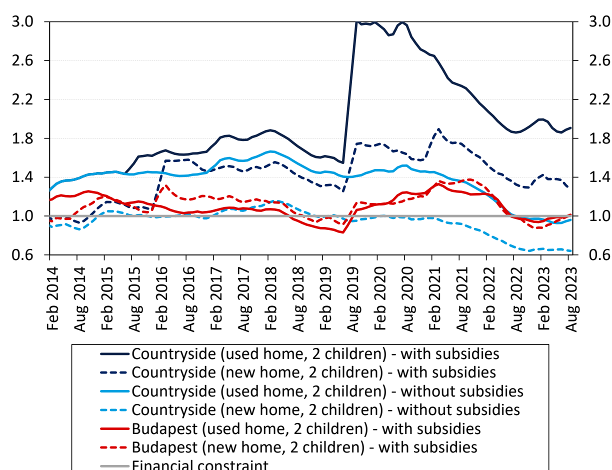
Note: For a detailed methodology, see the May 2023 Housing Market Report of the MNB. Source: MNB

years in the second quarter, falling to -0.8 per cent. In Budapest, nominal annual house price dynamics slowed to 4.9 per cent, in provincial towns to 1.1 per cent, and in villages house prices declined by 8.1 per cent annually (Chart 13). In real terms, the high inflation environment led to a year-on-year decline of 18.5 per cent in house prices nationally. The decline in house prices in villages may pose risks through the devaluation of bank collateral, but house prices in small settlements have risen again on a quarterly basis. One fifth of the housing loans issued in 2023 Q2 financed the purchase of a residential property in a village, where the average loan-to-value ratio was 53 per cent, compared to an average of 51 per cent in other municipalities. The average LTV ratio for each type of settlement has also been similar in recent years. Thus, credit institutions grant mortgages with similar downpayments in villages as they do at the national level. Besides this, in the second quarter, banks granted mortgage loans in all types of municipalities with a lower average LTV ratio than one year earlier.[7]

Housing market overvaluation eased in the latter half of last year and then stagnated at a high level, but the uncertainty about its extent also increased. In 2023 H1, compared to the end of the previous year, the level of house price overvaluation relative to economic fundamentals was only slightly different, increasing from 12 to 13 per cent nationally, and in Budapest there was no significant deviation from the equilibrium level (Chart 14). The uncertainty surrounding the degree of overvaluation at the national level increased significantly in previous quarters: while the decline in real house prices and positive labour market developments have moderated overvaluation over the past one year, the significant decline in housing credit has been pointing towards lower equilibrium house prices and thus an increase in overvaluation.

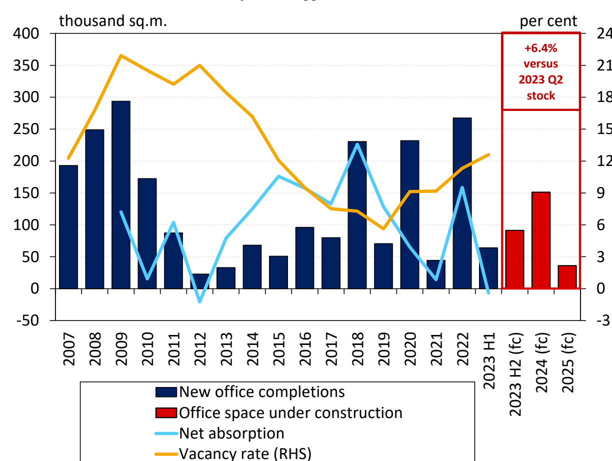
Without subsidies, housing affordability remains low. Until autumn 2022, the affordability of a house purchase deteriorated steadily, first due to dynamic house price increases and then due to rising mortgage lending rates (Chart 15). At the same time, in Budapest, due to the more dynamic increase in wages than house prices, the affordability of home purchase with the help of a loan improved again by August 2023 for married couples with two children (or expecting two children) with the use of family subsidies. In rural areas for families with two children who are eligible for family subsidies and with an average income, the affordability of buying a home with a loan remained at a high level in the past year as well, but

Chart 15: Housing Affordability Index (HAI) in the case of two children



Note: The HAI shows the number of times the income of a household with two average wage incomes covers the income required for the financed purchase of an average home. If the value of the indicator is below 1, the purchase represents excessive risk and financial burden. It is calculated with a flat of 65 square metres for two children. Except for the interest rate, the parameters of the loan product are constant until maturity. LTV = 70 per cent, PTI = 30 per cent, maturity = 15 years. Source: HCSO, NTCA, MNB

Chart 16: Development activity and vacancy rate in the Budapest office market



Note: Based on data from the end of 2023 Q2. Source: Budapest Research Forum, Cushman & Wakefield

without subsidies, the purchase of a used home would already result in mild financial strain, and the purchase of a new home would involve a significant financial strain in their case.

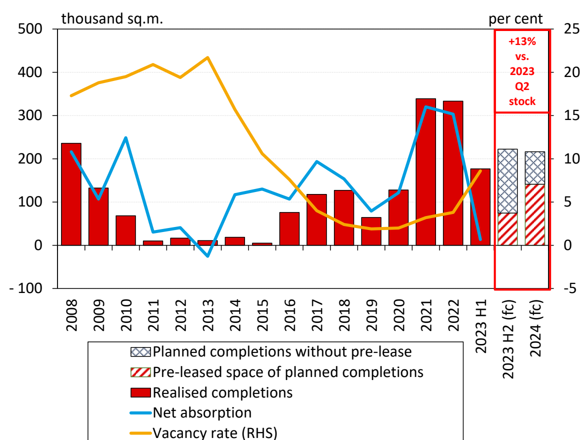
2.2. Rising risks in the CRE market with moderate bank exposure

Vacancy rates are expected to keep rising in the Budapest office market. In 2023 H1, 64,000 square metres of new office space was completed, which corresponds to 1.5 per cent of the 2022 year-end stock. In addition, office space equalling 6.4 per cent of the existing stock is expected to be completed by the end of 2025. In 2023 H1, net market absorption, which shows the change in the leased stock, was negative, i.e. the volume of leases that expired exceeded the volume of new space demand. As a result, the vacancy rate continued to rise, advancing by 1.3 percentage points to 12.6 per cent at the end of June compared to the end of 2022 (Chart 16). The vacancy rate of the Budapest office market cannot be considered high by historical standards, but it is the highest in the Visegrad countries. Looking ahead, the lower gross demand after the pandemic, the current subdued economic growth and planned completions are expected to further increase the vacancy rate. However, the risks are somewhat mitigated by the fact that large volumes of new developments are not being launched.

The vacancy rate in the industrial-logistics market in Budapest and its environs rose significantly. In 2023 H1, 177,000 square metres of industrial-logistics space was completed in Budapest and its environs, representing the largest volume of new supply in H1 compared to recent years. Development activity in this segment remains high, with the stock of properties expected to expand by 13 per cent over the next 18 months. Rental demand, however, has been unfavourable, with net absorption of only 13,000 square metres in 2023 H1. As a result, the vacancy rate rose significantly to 8.6 per cent at the end of June, up 4.8 percentage points from the end-2022 level (Chart 17). This level is well below the historical average, but is the highest in the region. At the national level, ongoing industrial investments and the associated supply chain are creating significant demand for industrial-logistics properties, which may mitigate the risk of oversupply stemming from the brisk development activity.

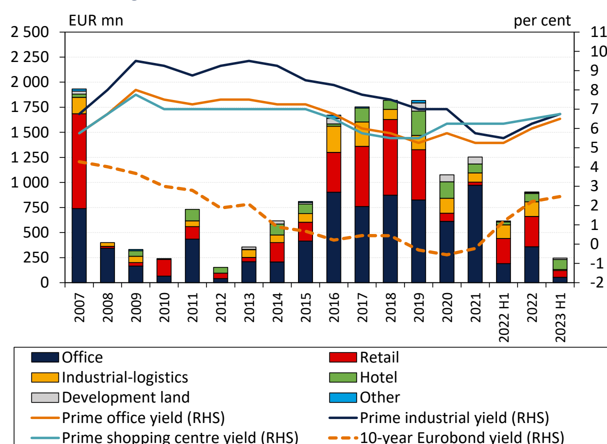
[7] For mortgages disbursed, the fact that banks have conservatively valued the underlying properties during the period of price appreciation also reduces the risks from the downturn in the housing market. For further details, please see: MNB's Financial Stability Report, May 2023, Box 5.

Chart 17: Development activity and vacancy rate in the industrial-logistics market of Budapest and its environs



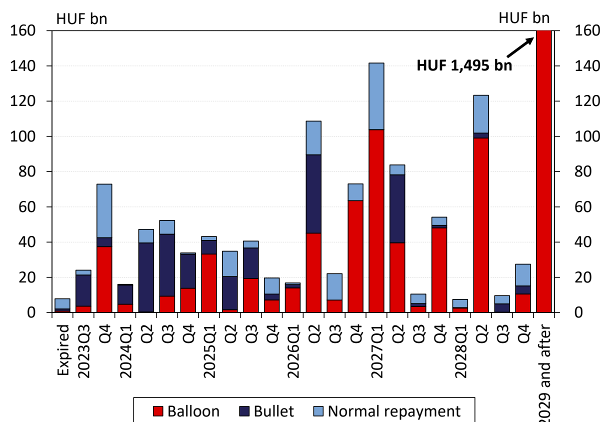
Note: Based on data from the end of 2023 Q2. Source: Budapest Research Forum, Cushman & Wakefield

Chart 18: Investment volume and prime yields in the Hungarian commercial real estate market



Note: The 10-year Eurobond yield is the Q4 average of the 10-year government bond yields issued by AAA-rated euro area countries, or the Q2 average for the first halves of a year. Source: CBRE, Cushman & Wakefield, MNB

Chart 19: Maturity breakdown of project loans collateralised by commercial real estate



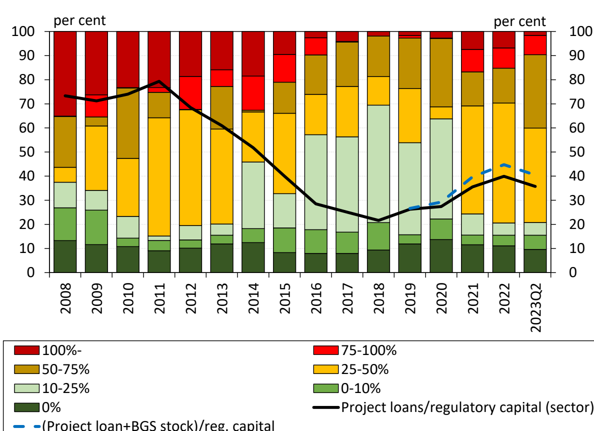
Note: Loans of the credit institutions sector. Project loans collateralised by commercial real estate, including housing estate project loans. Exposure-based distribution including the amount of capital outstanding and the amount of undrawn facilities. Source: MNB

Subdued investment activity and rising yields have increased the stability risks of CRE exposures. In 2023 H1, investment turnover in the domestic CRE market fell by 60 per cent in year-on-year terms (Chart 18). Prime yields continued to rise, with a 125-basis point increase in the office and industrial-logistics segment and a 50-basis point increase in the case of shopping centres compared to 2022 Q2. Since the end of 2021, real estate investment yield premiums in Hungary have declined by 145–220 basis points in certain segments compared to the 10-year Eurobond yield. Based on the rise in prime yields, depreciation in the office market is estimated at 19 per cent in the year to end-June 2023. The rate of depreciation is almost double the regional average of 10 per cent and closer to the Western European average of 22 per cent. Since the end of June 2023, the ECB has raised its key interest rate by a total of 50 basis points in August and September, which means that further yield increases and low investment flows can be expected in the latter half of the year, not only in Hungary but also across Europe.

The portfolio quality of project loans has not deteriorated, and no material renewal risk is expected going forward. In the one-year period following the end of June 2023, 7 per cent of the CRE-backed project loan contracts in the credit institutions sector will mature (Chart 19). On a quarterly basis, an average of HUF 40 billion of project loans will come due for renewal, which is a manageable volume in light of the HUF 85–200 billion of quarterly disbursements in recent years. In two years, 13 per cent of project loan contracts will mature, 20 per cent in three years and 40 per cent in five years. Within the next one year's maturities, so-called bullet loans, with one-off principal repayment at maturity, will make up half of the maturing portfolio. Of the project loan portfolio backed by CRE, which includes housing estate loans, 62 per cent is floating rate foreign currency loans, and this part of the portfolio is expected to experience further debt service increases in the coming periods in the absence of interest rate hedging.

The exposure of credit institutions to the real estate market through project lending and bond purchases is moderate. The project loan portfolio of credit institutions backed by CRE reached the levels seen in 2008–2011 in nominal terms, but the portfolio stood at 4 per cent of the banks' balance sheet total in 2023 Q2, which was less than 60 per cent of the exposure at that time. The ratio to regulatory capital amounted to 36 per cent at end-June 2023, and also including the BGS bond holdings related to the real estate sector held by credit institutions the ratio

Chart 20: Distribution of credit institutions by project loan stock-to-regulatory capital ratio



Note: Non-consolidated data for the credit institutions sector excluding affiliates, by balance sheet total. Based on the project loan stock under the CRR definition of project loans until 2019, and based on a broader project loan definition from 2020 onwards; use of the broader definition results in a 25 per cent higher project loan stock in 2023 Q2 compared to the CRR definition. From 2019 onwards, data increased by BGS stocks include BGS bond holdings related to real estate sector in addition to project loans. Source: MNB

was 40 per cent, compared to levels of 71–79 per cent between 2008 and 2011 (Chart 20). The share of credit institutions with project loan exposure to regulatory capital of above 75 per cent was moderate, amounting to 10 per cent of sector-wide total assets at the end of 2023 Q2. An increase in this ratio was observed in 2021–2022, but a decrease was again seen in 2023. Overall, taking into account the resilience of institutions to shocks, the exposure to the real estate market is much lower than at the onset of the 2008 economic crisis. In addition, thanks to the risk management of institutions and regulation, the risk parameters for CRE loans are significantly more prudent than in the previous economic cycle. Overall, the MNB will reactivate the Systemic Risk Capital Buffer (SyRB) for commercial real estate project loan exposures from 1 July 2024 as a preventive measure in view of the financial stability risks, which are not yet considered excessive but potentially rising going forward.[8]

[8] For more details please see: MNB Macroprudential Report, October 2023.

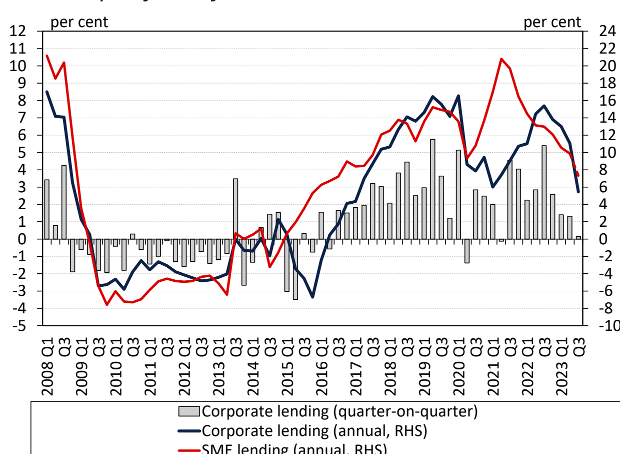
3. Corporate lending: as credit dynamics slow down, the role of foreign currency loans increases

In the year ending September 2023, as a result of loan disbursements and repayments, the total corporate loan portfolio of credit institutions increased by 5.4 per cent and the SME loan portfolio by 7 per cent, indicating that the growth rate has been declining since the start of the year. The issuance of foreign currency loans in 2023 H1 was more than double the level of a year earlier, but the majority of borrowers were export companies or companies with foreign currency income. According to the Lending Survey, banks did not change corporate lending conditions significantly on the whole during the third quarter, while a net 39 per cent of them reported a decline in demand, mainly for long-term loans. Due to the adequate liquidity and capital position amongst other reasons, banks' lending capacity is historically high and their willingness to lend is close to equilibrium. Lending rates fell in line with the decline in the benchmark rate in the first three quarters of 2023. Although the share of loans repaid at high interest rates and potentially requiring refinancing increased somewhat compared to the previous year, it was not historically outstanding. The increased uncertainty in demand could push the expansion of corporate loans into the range of 4–5 per cent by the end of 2023.

3.1. Corporate credit growth has shown a clear slowdown since the start of the year

At the end of September 2023, the corporate loan portfolio of banks grew by 5.4 per cent in year-on-year terms. The annual transactional growth rate of the non-financial corporations' loans outstanding in the credit institutions sector has been on a downward trend since the start of the year, moving from 11 per cent in June to just 5.4 per cent in September (Chart 21). SME credit growth slowed to 10 per cent by the end of 2023 Q2, and – based on preliminary data – to 7 per cent by the end of 2023 Q3. Corporate credit growth in 2022 and 2023 was significantly influenced by large individual transactions, and this year their impact on the dynamics was significantly negative. Meanwhile, growth in the loan portfolio was supported by government credit programmes. The annual growth rate of the corporate credit stock was the sixth highest in Europe, exceeding the euro area average by 6 percentage points.

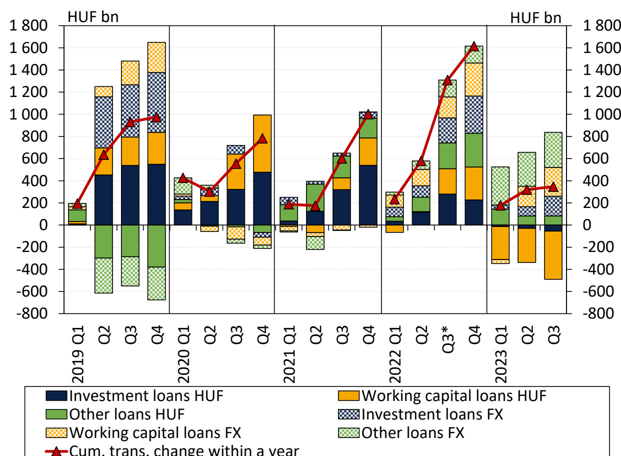
Chart 21: Growth of the total corporate and SME loan portfolio of the credit institutions sector



Note: Transaction based, prior to 2015 Q4, data for SMEs are estimated based on banking system data. In order to generate the growth rate, between March 2022 and August 2022, payments to Sberbank are also taken into account. The growth rate for SMEs in 2023 Q3 is based on preliminary data. Source: MNB

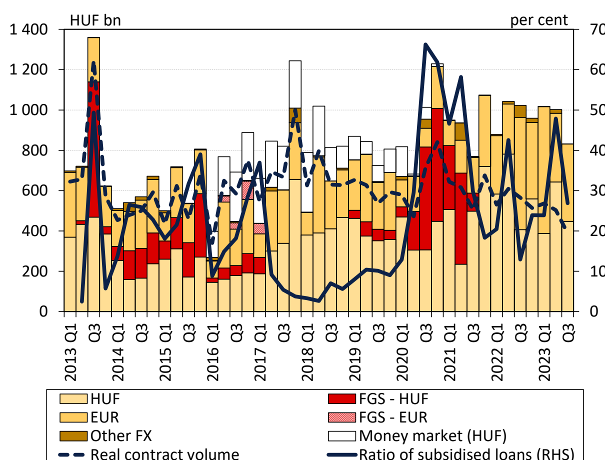
Expansion of the portfolio in the first nine months of the year was mainly tied to foreign currency loans. Between end-December 2022 and end-September 2023, corporate loans grew by around HUF 350 billion and thus expanded to a smaller degree compared to previous years. The loans outstanding of all sectors, except financial and insurance activities including holding companies, rose during the period under review, with the largest increases recorded in the information and communication, trade and repair of motor vehicles and motorcycles, and manufacturing sectors. Working capital loans outstanding decreased partly due to large individual transactions, while

Chart 22: Cumulated intra-year transactional growth in corporate loans outstanding by loan purpose and denomination



Note: Cumulated transaction data within a year adjusted for exchange rate effects and filtered for other stock changes. *The sectoral reclassification of Sberbank's portfolio is not excluded from the Q3 2022 transaction data. Source: MNB

Chart 23: New corporate loans in the credit institutions sector



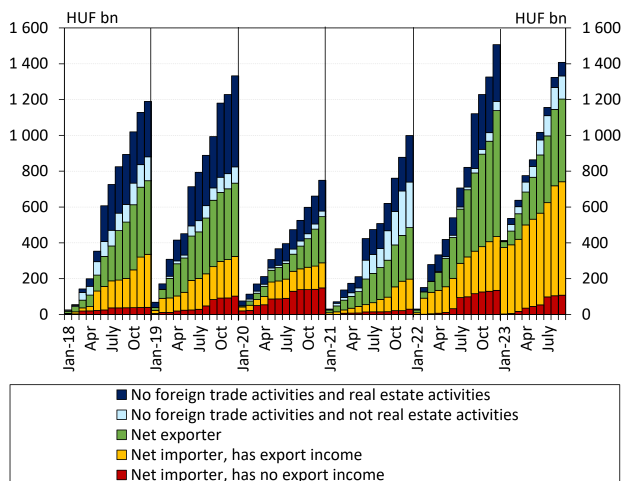
Note: Data not adjusted for exchange rate effects. The GDP deflator was used to calculate the real value of the new contract volume (2010 = 100 per cent). Source: MNB

investment loans outstanding increased over the last nine months, also largely due to large individual transactions (Chart 22). The composition by denomination shifted towards foreign currency loans in the first half of the year, showing a markedly different structure as compared to previous years. In 2020 and 2021, HUF loans dominated transaction growth overall, and in 2022 HUF and foreign currency loans expanded at similar rates. By contrast, in 2023 the HUF loan portfolio declined, while the foreign currency loan portfolio increased. In terms of company size, the expansion was relatively balanced, with both large corporate and SME loan portfolios showing growth in the first three quarters of 2023. Looking at interest rates, fixed-rate loans outstanding increased by around HUF 580 billion, largely as a result of government programmes, while variable-rate loans outstanding narrowed by around HUF 320 billion during the period under review.

The role of foreign currency loans is also significant in terms of new contracts. The volume of new contracts in the first three quarters of 2023 was 3 per cent lower year-on-year. Without correcting for the exchange rate effect, foreign currency loans increased by 17 per cent and HUF loans decreased by 17 per cent (Chart 23). Nearly one half of the volume of new contracts in the third quarter of the year was related to large corporates. However, new contracts in this segment decreased by some 20 per cent year-on-year, partly due to large transactions in the same period of 2022. In the small and medium-sized enterprise segment, new contract volumes fell by a similar extent as large companies compared to 2022 Q3. Contract volumes in real terms – adjusted for inflation – have been on a downward trend for several quarters in the corporate sector as a whole. In parallel with the strong rise of lending programmes, the share of subsidised loans in new loan issuance has increased significantly: it reached 27 per cent in 2023 Q3, substantially higher than the roughly 10–15 per cent level characterising the months preceding the pandemic in Hungary. The share of subsidised loans in the third quarter fell significantly compared to the nearly 50-per cent level in 2023 Q2, with this high ratio driven mainly by the surge in the amounts contracted under the Gábor Baross Reindustrialisation Loan Programme (BGH).

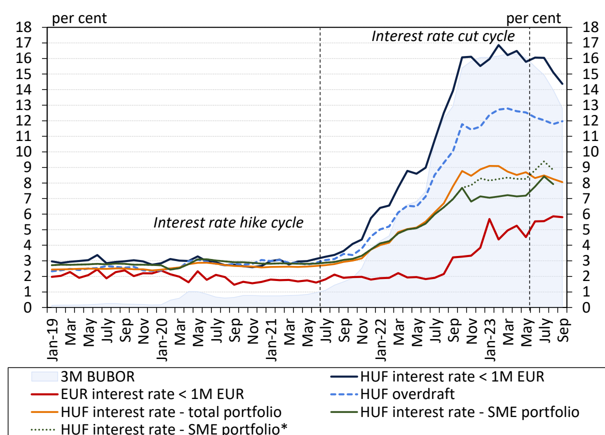
Foreign currency loans were typically taken out by companies with natural coverage in recent years. The new contract volume of foreign currency loans in the first nine months of 2023 was 26 per cent higher than in the previous year on an exchange rate-adjusted basis (Chart 24). However, 26 per cent of the significant issuance was

Chart 24: Cumulative new foreign currency loan contracts within a year by foreign trade activity of the corporate borrowers



Note: Exchange rate adjusted values. Source: NTCA, MNB

Chart 25: Interest rates on the outstanding corporate loan portfolio and on new loans



Note: Volume weighted interest rates. Categories below EUR 1 million include loans with variable interest rates or with interest rates fixed for up to one year. For the 3-month BUBOR, monthly averages are shown. HUF interest rate – SME portfolio*: interest rate on SME portfolio without interest rate cap. Source: MNB

accounted for by large individual transactions in the information and communication sector in January. The increasing issuance of foreign currency loans is a risk if these loans are requested by companies with no foreign currency revenues. Based on the available data, however, the majority of companies taking out foreign currency loans in the first three quarters of 2023 have export and FX revenues and thus have natural foreign currency coverage. Companies without natural coverage, based on 2022 data, borrowed a total of HUF 312 billion in foreign currency in the first three quarters of 2023, 30 per cent less than the volumes of foreign currency loans taken out by these types of companies in the same period of the previous year. The share of companies with natural coverage within the new foreign currency loan contracts increased compared to the first nine months of last year, from 60 per cent to 78 per cent as a share of the volume. An additional 5 per cent is the share of the real estate sector; although the companies in this sector do not have export income, their revenues (rental fees) are typically denominated in euros, due to the nature of the market.[9]

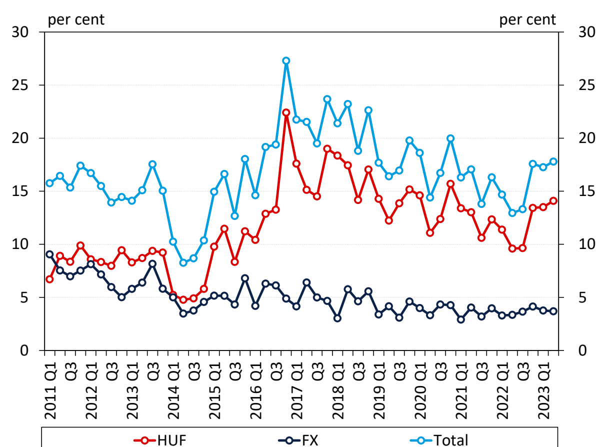
3.2. Loan rates fell in line with the decline in benchmark rates

The average interest rate on new, market-priced HUF loans peaked at the beginning of the year and then gradually declined in line with the fall in BUBOR. The average interest rate on low-amount (less than one million euros) market-priced HUF loans with variable interest rates within one year fell by 2.5 percentage points to 14.4 per cent by September, from a peak of 16.9 per cent in February (Chart 25).[10] This drop was mainly driven by a decline in the 3-month BUBOR, while the spread over this increased above 1 percentage point from around its historical low by September. However, the cost of funding for banks is influenced by a number of factors in addition to the BUBOR, including deposit rates, and therefore according to our estimate, the spread over the effective cost of funding can be larger than that. As a result of falling forint and rising foreign currency interest rate levels, the interest rate spread on low amount market-rate foreign currency loans narrowed from 11.7 percentage points at

[9] However, in some cases this is only an apparent collateral if the tenant does not have foreign currency revenue from which currency-based rent could be paid without exchange rate risk. A summary of the exchange rate risk related to commercial real estate project loans can be found in Box 1 of the November 2018 Financial Stability Report.

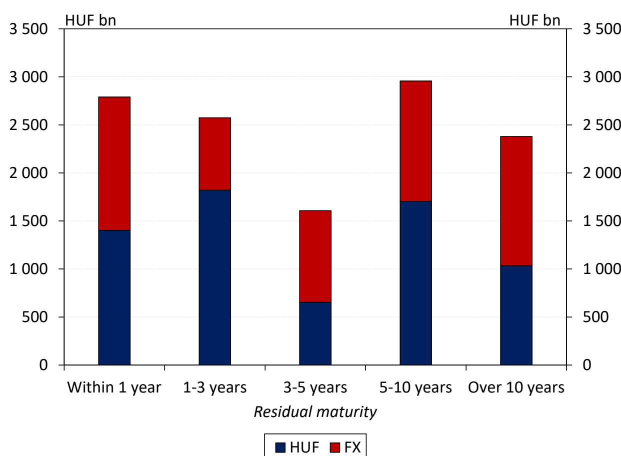
[10] HUF interest rates could be further reduced by the decision of the Ministry of Economic Development to apply a 12-per cent interest rate cap on working capital loans after 9 October 2023 – although this is both voluntary and less of an effective constraint as the cycle of interest rate cuts progresses.

Chart 26: Repaid loan portfolio as a ratio of the total corporate loan portfolio by denomination



Source: MNB

Chart 27: Maturity structure of outstanding loans by denomination in August 2023



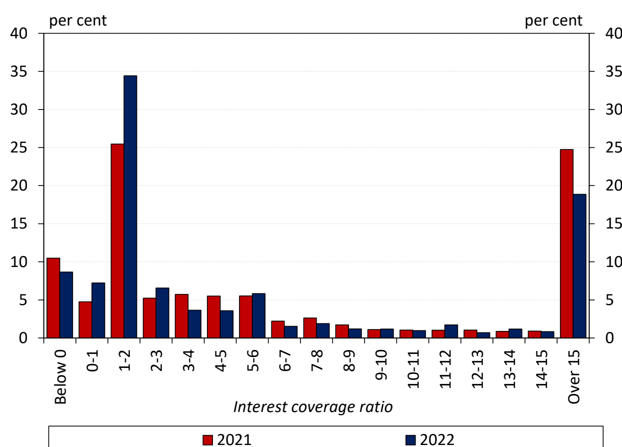
Source: MNB

the end of last year to 8.6 percentage points by September 2023. However, the effective cost of credit for Hungarian companies is substantially reduced by the government-subsidised loan programmes (Széchenyi Card Programme MAX+ and the Gábor Baross Reindustrialisation Loan Programme), which were available to eligible companies even at an effective HUF interest rate of 5–6 per cent. As for loans already outstanding, based on data at the end of August 2023, the interest rate cap prevents interest rates from rising for around HUF 650 billion of loans in the SME loan portfolio. The average interest rate on the total SME loan portfolio was 7.9 per cent at the end of August 2023, which is 0.9 percentage point lower than it would have been without the interest rate cap.

In 2023 H1, the share of the repaid loan portfolio that is potentially in need of refinancing increased compared to the previous year, but was not historically high. The stock of loans repaid in 2023 Q1 and Q2 accounted for 17 per cent and 18 per cent of total corporate loans outstanding at that time, an increase from the previous year, however this indicator was even higher at 22 per cent in the quarters of 2017 and 2018 (Chart 26). Due to the typically longer maturity of subsidised loans, the value of the indicator moved on a downward trend from 2020 to 2022 Q3, but with the renewal of subsidised programmes, we saw increasing but still moderate shares in recent quarters. Over the past decade, the share of the maturing FX portfolio in the total corporate loan portfolio has roughly halved. The increasing volume of foreign currency loan contracts seen in recent quarters cannot therefore be linked to significant maturities of foreign currency loans outstanding, which may have been used by companies to renew maturing HUF loans due to their lower interest rates.

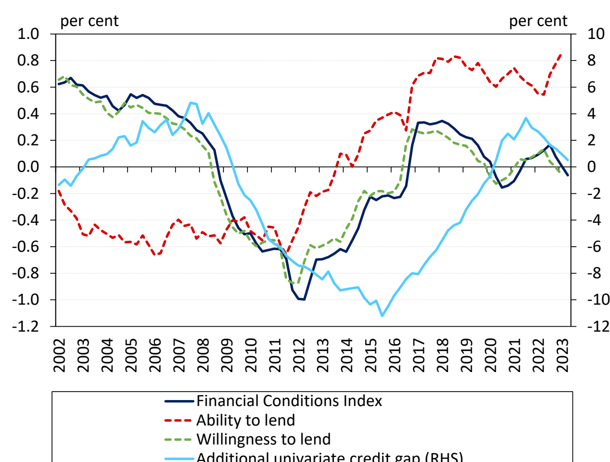
The maturity and repricing structure of the corporate loan portfolio has become more favourable in recent years. As a result of the large-volume subsidised loan programmes introduced after the pandemic, the composition of the existing loan portfolio changed to a great extent. The volume-weighted average term increased from 5.1 years in March 2020 to 5.9 years in August 2023, while the proportion of loans with variable interest rates within one year decreased from 73 per cent to 55 per cent. Despite the more favourable maturity and repricing structure, over the next three years, approximately one half of the corporate HUF loan portfolio and 38 per cent of the foreign currency loan portfolio may expire (Chart 27). If interest rates remain

Chart 28: Distribution of corporate loan portfolio by interest coverage



Note: Interest coverage ratio = (Pre-tax profit + Interest paid and interest-like expenses) / Interest paid and interest-like expenses. In the chart, the total loan portfolio of corporations with different interest coverage ratios is shown within the total loan portfolio. The chart only shows debtor corporations. In the case of negative values, the pre-tax profit of the company in the given year was negative. Source: NTCA, MNB

Chart 29: Evolution of the Financial Conditions Index and the credit gap



Note: Positive values represent a larger contribution to economic growth compared to the cyclical position of the economy, while negative values represent a smaller contribution. For the detailed methodology, see Hosszú (2016): The impact of credit supply shocks and a new FCI based on a FAVAR approach, MNB Working Papers 2016/1.; Credit gap calculated on the basis of the total loans outstanding by the financial intermediary system, MNB methodological description. Source: MNB

higher than in previous years, there may be significant renewal risk for these loans.

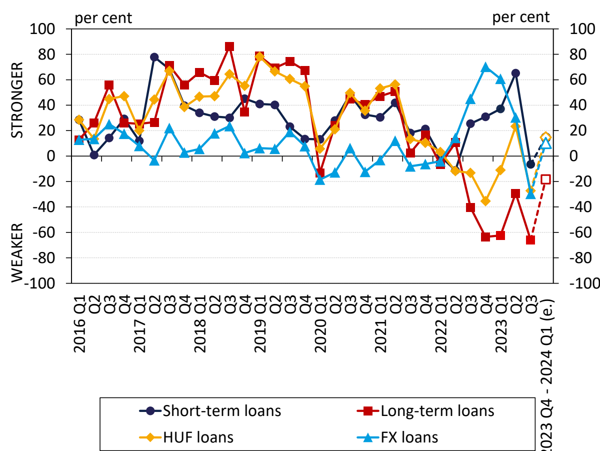
As a result of the rising interest rates, the typical interest coverage of enterprises has decreased. The interest coverage ratio – calculated as the sum of earnings before taxes and the amount of interest to be paid normalised by the interest rates to be paid – of companies with debt in 2022 decreased significantly. While companies with a lower interest coverage ratio, between 0 and 2, accounted for only 30 per cent of the outstanding loan stock in 2021, this rose to 42 per cent in 2022 (Chart 28). Regarding large companies, the indicator increased by 16 percentage points from 2021 to 2022, while for SMEs it increased by only 8 percentage points. The subdued growth in the SME sector is probably due to the interest rate cap and the widespread availability of subsidised loan schemes offering low interest rates, which limit the increase in interest rates for the SME-s.

3.3. Lending capacity of the banking system remains stable

Through its lending activity, the banking system has a nearly neutral impact on the business cycle. The Financial Conditions Index deteriorated slightly, but it does not significantly different from zero (Chart 29). This means that the impact of the banking system on the real economy is neutral, in line with the cyclical position, neither underfinancing nor overfinancing the economy. Of the two factors in the Financial Conditions Index, the ability to lend continued to improve in recent quarters, reaching a historically high level that is well above those seen in the 2007–2008 global financial crisis. The other factor, willingness to lend, in the Financial Conditions Index deteriorated in 2023 H1, falling into slightly negative territory. Although the indicator has approached the levels seen during the pandemic, it is not significantly different from zero. As in recent quarters, the Hungarian corporate credit-to-GDP ratio continued to decline in 2023 Q2 and currently stands at 19 per cent, which was last seen before the outbreak of the pandemic. Low corporate credit outstanding as a share of Hungarian GDP suggests that there is considerable room to increase credit penetration, but the positive credit gap highlights the importance of complementing financial deepening with real convergence.[11]

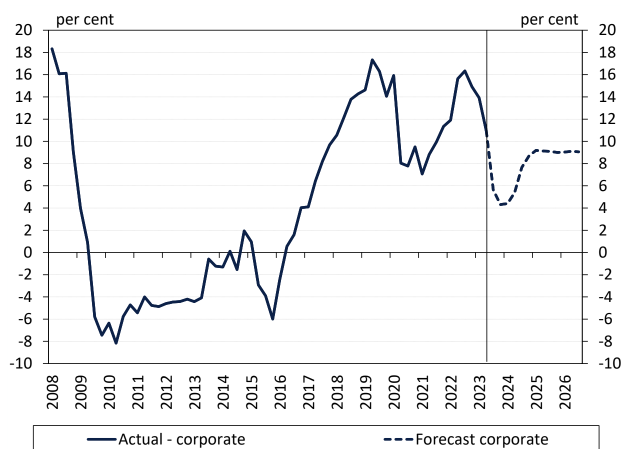
[11] The additional credit-to-GDP gap is an indicator used by the MNB to estimate the evolution of the equilibrium credit stock, the financial cycle situation and cyclical systemic risks, based on international recommendations. A positive credit gap indicates a level of credit above equilibrium, while a negative credit gap indicates a level of credit below equilibrium. For the calculation and use of the additional credit-to-GDP gap see:

Chart 30: Changes in corporate loan demand



Note: Net percentage balance of respondent banks indicating stronger/weaker demands, weighted by market share. Source: MNB, based on banks' responses

Chart 31: Forecast for the corporate loan portfolio



Note: Transaction-based annual growth rate based on data from the financial intermediary system. Source: MNB

Overall, demand for corporate loans has decreased. Institutions responding to the Lending Survey did not significantly change their corporate lending conditions in 2023 Q3 on the whole. However, due to the uncertain economic outlook a net 12 per cent of the banks indicated an increase in spreads for large and medium-sized enterprises, and 21 per cent raised the minimum required creditworthiness level for small and micro-sized enterprises. A net 39 per cent of the banks surveyed reported a decline in demand for corporate loans in 2023 Q3. In parallel with the narrowing of the spread between FX and HUF interest rates, the currency split in loan demand that existed in previous quarters disappeared: 27 per cent of the banks reported decreasing demand for HUF loans and 30 per cent for FX loans (Chart 30). As a result of the decreasing investment activity companies, around two thirds of the banks reported a decline in demand for long-term loans. For 2023 Q4 and 2024 Q1, only a net 6 per cent of the banks expect a further decline in demand for corporate loans. However, a net 15 per cent expect a pick-up in short-term loans.

More moderate growth in corporate loans outstanding may be seen in the coming years. Higher interest rates compared to previous years and a smaller supply of subsidised programmes are expected to lead to more moderate growth in corporate loans outstanding in the coming years (Chart 31). Banks already contracted a large part of the Gábor Baross Reindustrialisation Loan Programme in 2023 H1, so only the Széchenyi Card Programme will help to boost growth in loans outstanding. The high stock of liquid assets held by companies, which amounts to around 30 per cent of GDP, may also reduce their willingness to borrow. However, with higher inflation, corporate demand for working capital loans may remain strong and, looking ahead, demand for investment loans may pick up again as the economy recovers and the interest rate environment normalises. On the whole, in this uncertain economic environment the growth rate of corporate loans outstanding may decelerate into the 4–5 per cent level by end-2023 and stabilise at 8–9 per cent from end-2024.

Methodology underlying the determination of the benchmark countercyclical capital buffer rate and supplementary indicators signalling the build-up of cyclical systemic financial risk.

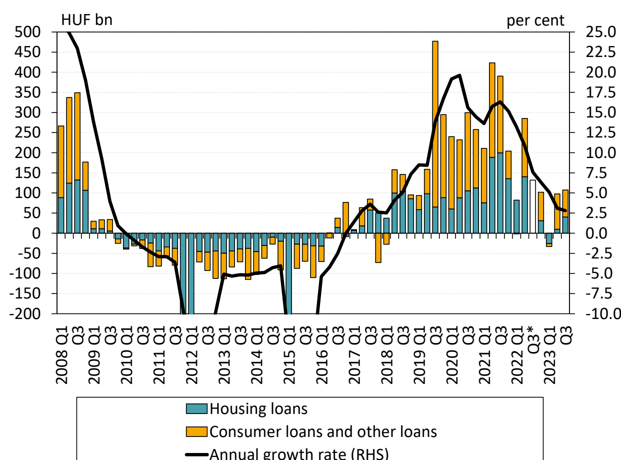
4. Household lending: slower credit growth, new types of credit risk

Household loans outstanding grew at a nominal rate of 2.8 per cent between September 2022 and September 2023. At the same time, the volume of new disbursement declined in year-on-year terms during the first nine months of the year. The largest decrease was seen in housing loans. By contrast, the market for consumer loans – other than prenatal baby support loans – such as personal loans and home equity loans picked up in the third quarter compared to the same period last year. In addition to market-based housing loans, the issuance of low-interest subsidised loans, which are favourable for customers, also fell short of its previous level in the first nine months of the year. The decline in subsidised lending suggests that real wage developments, consumer confidence and the general economic environment are also having a significant impact on lending, along with the tighter monetary conditions due to high inflation. In an improving economic environment, in line with disinflationary trends, loan disbursement is expected to pick up from next year onwards, while expansion of the loan portfolio is projected to remain low throughout this year.

The interest rate cap will protect eligible customers from rising instalments until the end of 2023. In terms of new loans, however, a pick-up in loan refinancing would be needed to allow customers to benefit from the future normalisation of the interest rate environment. Overall, the indebtedness of new borrowers does not pose a stability challenge, as the higher average loan amounts are compensated by higher borrower incomes. However, there is a risk that some borrowers of consumer credit are likely to borrow to support their liquidity position.

4.1. Housing loan issuance fell substantially, while demand for consumer credit increased

Chart 32: Household loan transactions of credit institutions

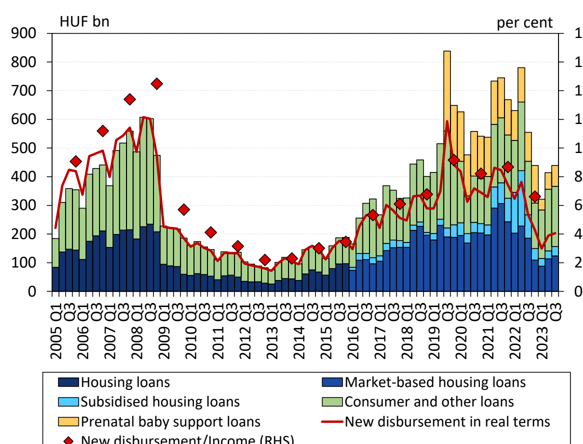


Note: In order to calculate the annual growth rate, we also took the repayments on the Sberbank portfolio into account between March 2022 and June 2022. * The 2022 Q3 transaction data is an estimate filtered from portfolio purchases. Source: MNB

Household loans outstanding grew at a moderate year-on-year pace. The gradual deceleration in the annual growth rate from 2021 H2 continued in 2023, reaching 2.8 per cent in September (Chart 32). This slowdown was driven by the uncertain economic outlook, declining real wages and a sharp fall in lending as a result of tight monetary conditions aimed at curbing inflation. In 2023 H1, transaction-based growth was mainly supported by personal loans and prenatal baby support loans, while in the third quarter, housing loans also contributed to growth in loans outstanding. Although the household loan portfolio has expanded significantly in recent years, with the Hungarian growth rate substantially outpacing the relevant indicators of both the euro area and Visegrad countries, Hungary's credit penetration remains low in a European comparison: at the end of 2023 Q2, the credit-to-GDP ratio was 15 per cent, one third of the EU average and one half of the Visegrad average. Hungary is thus ranked third lowest in the EU in this regard (and second lowest in terms of the housing loans-to-GDP ratio), suggesting that there is considerable scope to deepen credit penetration.

New loan disbursements decreased, especially in the housing loan segment. The value of new lending by

Chart 33: New household loans in the credit institution sector



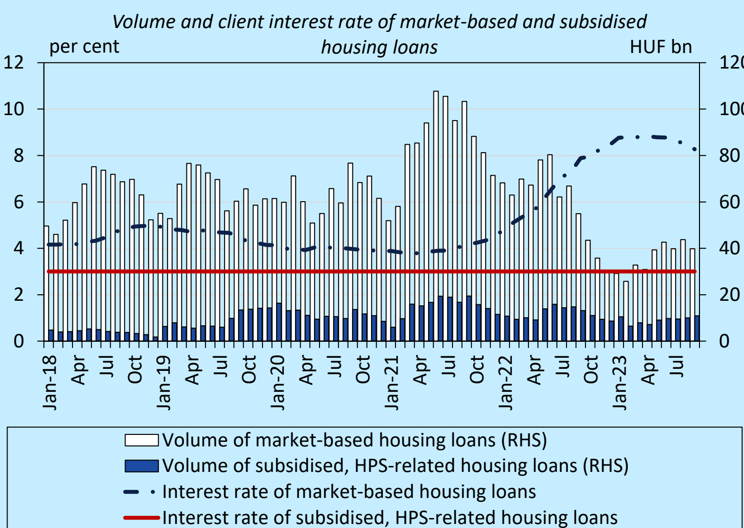
Note: Without FGS loans and early repayment scheme. The disbursement/income figure shows the sum of the annual nominal loan disbursement as a ratio of the household sector's total annual disposable income. From 2016 Q1, the housing loan disbursement has been divided to market-based and subsidised housing loans. Source: HCSO, MNB

credit institutions to households fell by 40 per cent in the first nine months of 2023 compared to the same period in 2022, and in real terms it did not even reach the level of the same period of 2016 (Chart 33). For consumer and other loans – other than prenatal baby support loans –,[12] a more modest decline of only 9 per cent was observed in the first half of the year compared to 2022 H1, while in the third quarter there was already a 13-per cent year-on-year increase. The largest annual decline was visible in housing loans, reaching 67 per cent in 2023 H1 and 41 per cent in 2023 Q3 versus the corresponding periods in 2022, and affecting both market-based and subsidised products. One possible reason for the fall in subsidised loan disbursement is that customers often borrow such together with market-based housing loans, and thus an increase in the cost of market-based housing loans may completely prevent the house purchase, thereby reducing demand for subsidised loans as well. Detailed data shows, however, that the number of clients borrowing *only* subsidised loans decreased as well (Box 2).

BOX 2: EVOLUTION OF MARKET-BASED AND SUBSIDISED HOUSEHOLD LOAN DISBURSEMENT

In addition to market-rate housing loans, the volume of subsidised (housing) loans with a fixed, low client interest rate has also fallen over the past year. In parallel with the tightening of monetary policy in response to the high inflation environment, a decline in the issuance of housing loans could have been observed from 2022 H2 onwards. However, the slowdown has affected not only market-based housing loans with higher interest rates, but also the much more favourable HPS loans with a fixed client interest rate of 3 per cent until maturity. Issuance of the former was 50 per cent lower in 2023 Q2 compared to the same period of the previous year, while issuance of the latter was 33 per cent lower.[13]

Volume and client interest rate of market-based and subsidised housing loans



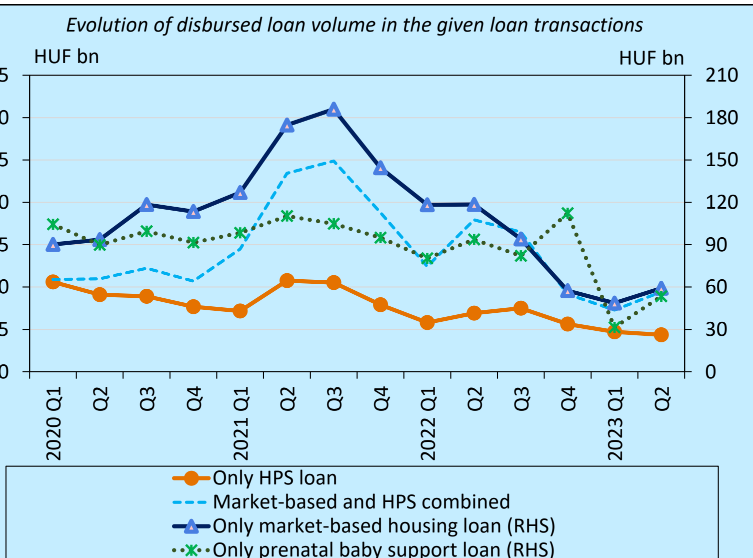
Note: FGS Green Home Programme and HPS relating to it have been excluded from the data. In case of market-based housing loans, loan interest rate equals the client interest rate. Source: MNB

[12] The disbursement of prenatal baby support loans was nearly 60 per cent lower in 2023 H1 compared to the same prior-year period, explained mainly by demand brought forward due to uncertainty regarding the termination of the programme. In 2023 Q3, however, only a 28-per cent year-on-year decline was detectable.

[13] The overall housing credit market fell by a larger amount, 67 per cent, over the same period. This is due to the base effect of the FGS Green Home Programme, but those loans have been filtered out in this analysis.

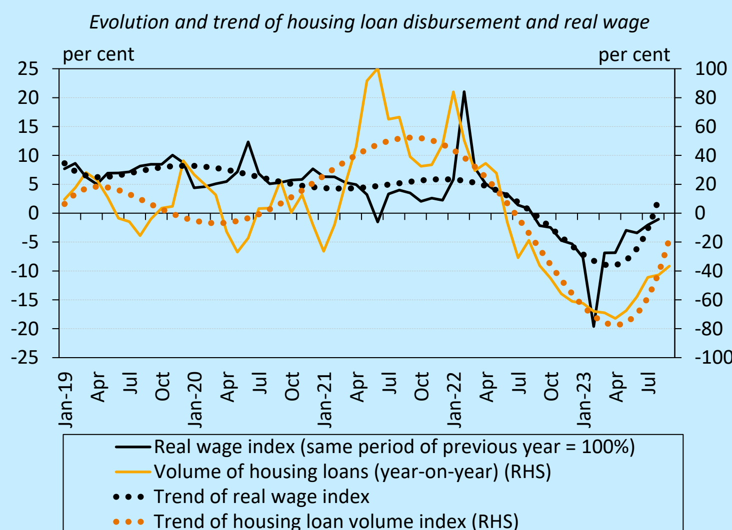
Subsidised loans are often taken out by customers together with market-based loans. Some borrowers also supplement their market-based housing loan with a subsidised loan: in case of 11 per cent of transactions involving a housing loan and/or a prenatal baby support loan concluded between 2019 Q2 and 2023 Q2,[14] customers also supplemented their market-based housing loan with a subsidised (HPS or prenatal baby support) loan. The combination of subsidised and market-based loans is particularly prevalent in regions with higher house prices: correlation indicators show that the higher the ratio of house prices to income in a given district, the higher the share of those combining market and subsidised loans tended to be. For these customers, the decline in subsidised lending may also be due to the fact that as interest rates on market-based housing loans rise, their availability becomes more limited and thus the entire purchase of a home may become impossible, which also reduces the issuance of subsidised loans.

Evolution of disbursed loan volume in the given loan transactions



Note: FGS Green Home Programme and HPS relating to it have been excluded from the data. Source: MNB

Evolution and trend of housing loan disbursement and real wage



Source: HCSO, MNB

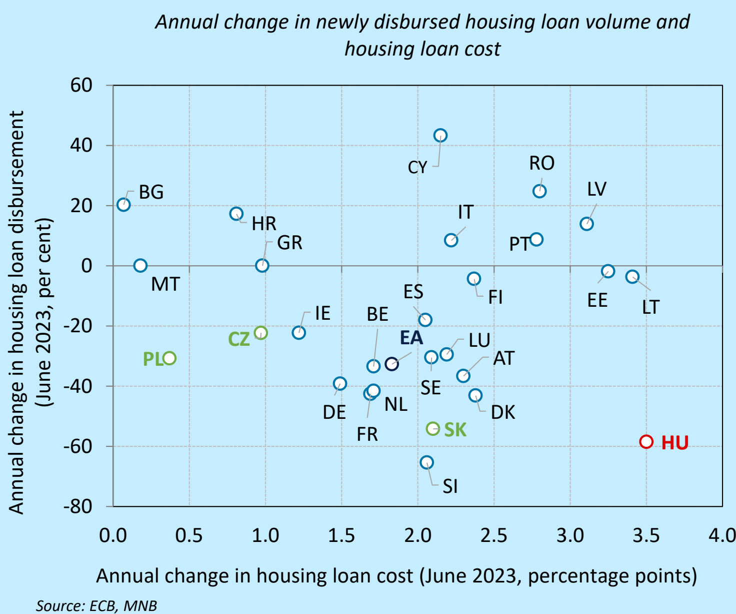
A reduction in the transaction volume of customers who only take out subsidised loans has also been observed. Another part of borrowers, however, do not combine their loans but only take out HPS or prenatal baby support loans: 46 per cent of loan transactions concluded between 2019 Q2 and 2023 Q2 involved this type of subsidised loan contract by customers. The data show that the disbursed volume has also declined in these cases (excluding 2022 Q4 demand brought forward due to a possible phase-out of the prenatal baby support loan). While the year-on-year volume decline for market-based-only borrowers was 50 per cent in 2023 Q2, the decline was 37 per cent for HPS-only borrowers and 43 per cent for borrowers of only a prenatal baby support loan.

For transactions involving only market-based housing loans, both the number of contracts and the contract size decreased compared versus end-2021. At the same time, for borrowers of HPS-only loans, average loan amounts remained close to the statutory levels, even with the decrease in the number of transactions. The share of those combining market-based and subsidised loans showed negative correlation at the district level with the annual change in the number of borrowers with at least one subsidised loan in 2023 Q2. Subsidised loan disbursement nevertheless fell not only in those districts where the combination of market-based and subsidised loans was typical.

[14] Borrowing is counted as one transaction when a customer at one point in time (i) takes out one or more housing loans, (ii) takes out a prenatal baby support loan, or (iii) takes out a prenatal baby support loan before taking out a housing loan.

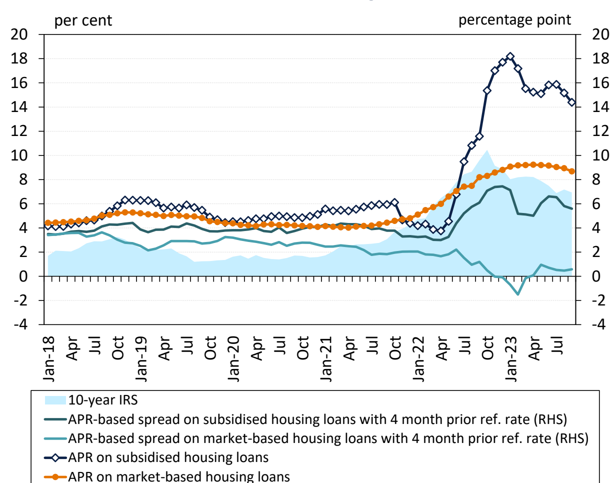
All of this suggests that, in addition to interest rates, other factors such as current and expected real wage developments, consumer confidence and the economic outlook also have a significant impact on the timing and uptake of housing loans. Borrowers are more likely to postpone a decision involving a significant financial commitment, such as taking out a housing loan, in the current period with a more uncertain outlook and low real wages relative to property prices. A general slowdown in the credit markets is apparent, which is a natural phenomenon at a time when the economic outlook is deteriorating. Hungarian trends are in line with those in the region: international comparisons also show a decline in housing loan disbursement in countries that have experienced more moderate interest rate increases. In several EU Member States, the annual decline in the volume of newly disbursed housing loans was more than 30 per cent in June 2023, but the average increase in lending rates was "only" 150 to 250 basis points.

Annual change in newly disbursed housing loan volume and housing loan cost



Source: ECB, MNB

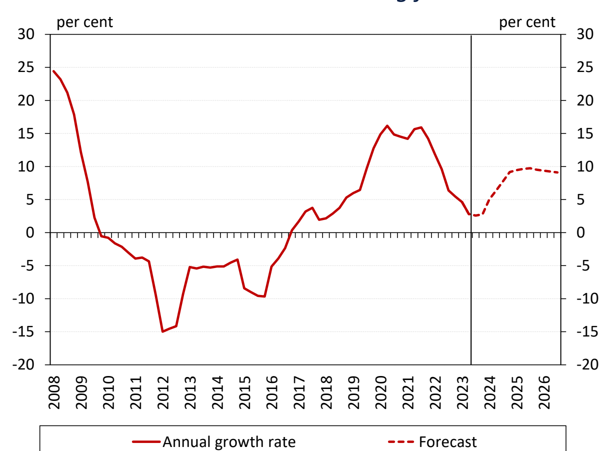
Chart 34: Evolution of APR and spread on newly disbursed housing loans



Note: Averages weighed by contractual amount. The spreads were calculated on the basis of relevant BIRS data according to interest periods. Subsidised loans cover the FGS GHP, the subsidised HPS constructions, the subsidised bridging loans and the subsidised housing loans. Source: MNB

The spread on market-based housing loans turned positive in 2023 Q2. The average APR of newly contracted state-subsidised housing loans has dropped slightly since the beginning of the year, reaching 14 per cent in September. This is partly due to the fact that in the case of loans linked to the Home Purchase Subsidy Scheme for Families (HPS), which account for the largest share of subsidised loans, the interest subsidy is linked to government bond yields by the Government Debt Management Agency, which have decreased since the beginning of the year, and thus the APR has also fallen. However, the average credit cost of newly disbursed market-based housing loans has not followed the decline in the cost of funds and has stagnated at around 9 per cent since January (Chart 34). Taking into account the time required for bank repricing, and correspondingly calculating spreads with reference rates of four months before, credit institutions have already realised positive, yet still low, spreads on their market-based housing loans from 2023 Q2 onwards. September's spreads on subsidised loans, which were 5 percentage points higher than those on market-based housing loans, continue to provide higher profitability for banks on these products compared to market-based housing loans. The relationship between the policy rate and the interest rates on individual loan and deposit products is discussed in Box 3.

Chart 35: Household lending forecast



Note: Transaction-based annual growth rate based on data from the financial intermediary system. Source: MNB

Expansion in the household loan portfolio is expected to remain subdued in 2023. Annual growth in the household loans outstanding held by the overall financial intermediary system, i.e. credit institutions and financial enterprises, amounted to 2.8 per cent in June 2023. The changes to the conditions of the family support measures that will come into force from 1 January 2024[15] will also affect demand for loans this year. For the prenatal baby support loans, the narrowing of eligibility may allow women over 30 to bring forward their borrowing. The increased amount of subsidy within the Rural HPS as of next year may lead to postponed demand in the eligible settlements. Likewise, the new HPS Plus programme coming into force in 2024 might lead eligible borrowers (married couples committing themselves to having more children) to postpone their demand for the next year, while those who will not be eligible for the HPS Plus but are still eligible for the city HPS (those who do not intend to commit to having more children) might bring their demand forward. The HPS Plus can moderate the fall in demand in 2024 stemming from the phasing out of the city HPS and the modification of the eligibility of the prenatal baby support loan. The normalisation of monetary conditions in line with disinflationary developments and the improving economic environment should support lending in the medium term. Based on the responses to the Lending Survey, banks expect demand for housing loans to pick up in 2023 Q4 and 2024 Q1, while only a small share of respondents expect demand for consumer loans to pick up. We estimate that annual growth of household loans outstanding will remain subdued for the rest of the year (growth may be 2.8 per cent for 2023 as a whole). Annual dynamics could exceed 5 per cent from 2024 onwards (Chart 35) and might remain close to 10 per cent for a prolonged period from 2025 onwards.

BOX 3: CHANGES IN DEPOSIT AND LENDING RATES – DIFFERENCES DURING CYCLES OF INTEREST RATE INCREASES AND CUTS

Analysing the relationship between interbank interest rates and deposit and lending rates is particularly important for the interest rate channel of monetary transmission. In a changing interest rate environment in Hungary since mid-2021, the pace and extent to which deposit and lending rates follow changes in financial market interest rates, which are influenced by the central bank's interest rate decisions, are a key factor. In June 2021, the MNB started a

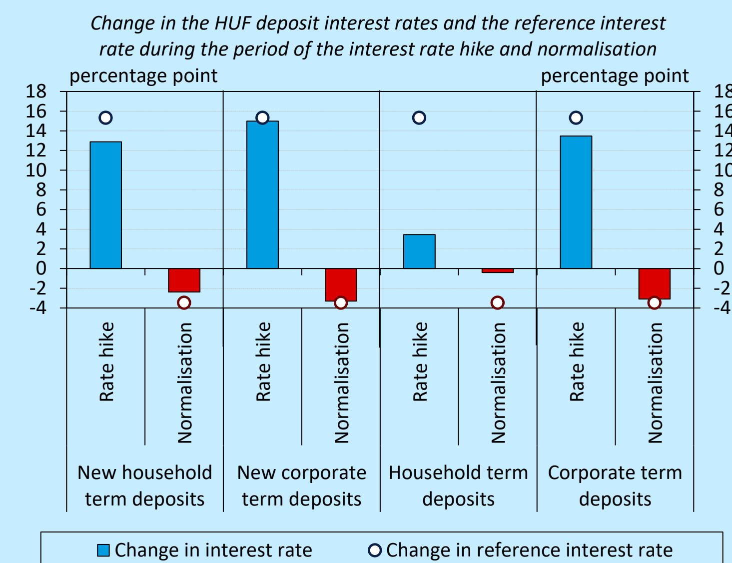
[15] From 1 January 2024, women under the age of 30 will be eligible for prenatal baby support loans, while the maximum loan amount available will increase to HUF 11 million (as a transitional measure, women aged 31–41 can still apply for a prenatal baby support loan in 2024 if they can prove they are pregnant). For the HPS, the Rural HPS will be available with increased subsidy amounts, the city HPS will be phased out, and the HPS Plus will be introduced for married couples, committing themselves to having more children.

cycle of interest rate increases, which peaked in October 2022, to prevent the lasting effects of inflation risks and to anchor inflation expectations. At that time, the MNB introduced a targeted temporary instrument (overnight quick tender) to raise short-term yields, with an interest rate of 18 per cent. Normalization of the interest rate environment began with the reduction of this interest rate at the end of May 2023. These changes have also been reflected in the evolution of interbank interest rates, which are a key determinant of the cost of funding for banks.

According to the literature and the experiences of the Hungarian banking system, interest rate transmission is often asymmetric. This can occur not only by instrument (deposits or loans), but also by sector (household or corporate), and by the direction of the change in interest rates (interest rate hike, interest rate cut). The experiences of the May 2023 Financial Stability Report shows that regarding domestic deposits the repricing of corporate sector deposits relative to household deposits proved to be faster during the base rate hikes, with the repricing speed typically less than one month for corporate deposits and three months for household deposits.[16] Regarding the degree of pass-through of changes in the benchmark interest rate, the analysis shows that the efficiency of monetary transmission is above 90 per cent for corporate deposits and around 50 per cent for household deposits. A study by Hajnal and Lados (2022) on the repricing practices of newly disbursed housing loans shows that although the repricing practices of banks are not uniform, changes in interbank interest rates are incorporated into domestic mortgage rates in approximately four months.[17]

Deposit interest rate transmission is higher for corporates than for households, both in the interest rate hike cycle and in the normalisation period. In the analysis of deposit interest rate transmission, the average interest rate on existing deposits and new deposits was examined[18] and the monthly average time series of the 3-month BUBOR was used as the reference rate. Transmission was analysed separately during the periods of the interest rate hike cycle (June 2021–April 2023) and during the subsequent normalisation (May 2023–September 2023), which are consistent with the pre-hike lows and pre-decline highs in deposit rates. The level of the 3-month interbank rate increased by a total of 15.3 percentage points in the selected rate hike phase and decreased by 3.5 percentage points in the normalisation phase. Changes in the benchmark rate were most strongly reflected in corporate deposits. Retail term deposits showed the slowest and lowest repricing, especially during the normalisation phase. During the interest rate increases, the 0.3 per cent interest rate on fixed household deposits rose to close to 4 per cent, but during the normalization period, the transmission may be slower, as banks have only a narrower margin of maneuver in terms of reducing deposit interest rates.

Change in the HUF deposit interest rates and the reference interest rate during the period of the interest rate hike and normalisation



Source: MNB

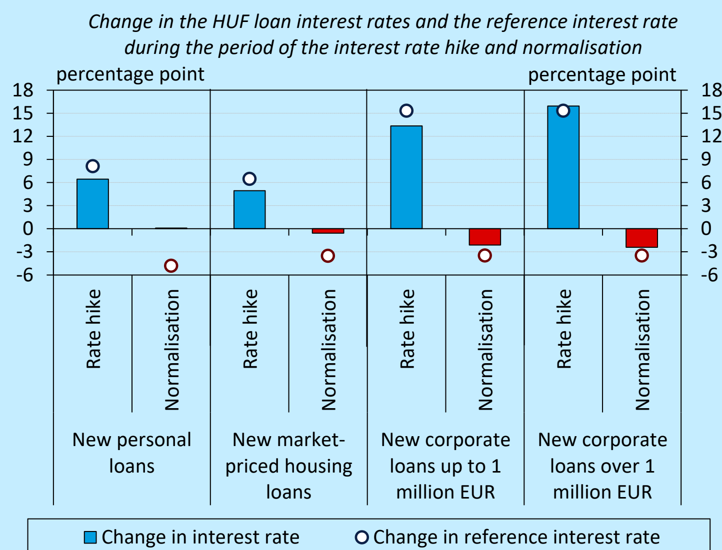
[16] The analysis is discussed in more detail in the May 2023 Financial Stability Report and Box 7.

[17] Gábor Hajnal – Csaba Lados (2022): Analysis of the Repricing Practice of Newly Disbursed Housing Loans. *Financial and Economic Review*, 21(3), September 2022, pp. 5–43.

[18] The average interest rate on new deposits may be biased by certain statistical effects. These include the fact that interest rate statistics for the household sector include non-profit enterprises that serve households and sole proprietors, who typically obtain higher interest rates than the general population. On the other hand, the amount and interest rate of new deposits are biased substantially upwards by the short-term deposits of wealthier households, often deposited more than once a month.

The transmission of loans is also stronger in the corporate segment. In our analysis, we assumed that the 5-year Budapest Interest Rate Swap (BIRS) for pricing personal loans, the 10-year BIRS for market-based housing loans and the 3-month BUBOR for corporate loans can be considered as the most important reference rates for banks operating in Hungary. For BIRS, the transmission of the interest rate hike was examined between January 2021 and April 2023, as the rise in longer-term yields started before the start of the interest rate hike cycle in June 2021. In the case of normalisation, the decline in BIRS already started in October 2022, but the change in lending rates has not been followed by a change in credit rates. The effects of normalisation were analysed between May 2023 and September 2023, i.e. starting from the peaks of the lending rates as opposed to the reference rates. In both phases, we observed a stronger and faster transmission for corporate credit rates compared to household credits.

Change in the HUF loan interest rates and the reference interest rate during the period of the interest rate hike and normalisation



Source: MNB

At the same time, the decline in interbank interest rates is transmitted more slowly, which is consistent with the experiences from the literature showing that lending rates are more sticky downwards. The weaker and lower transmission of market-priced housing loans is probably partly due to the fact that the benchmark interest rate of the instrument and the relative position of the interest rate also changed over the period under review. At the start of the interest rate hike, and in the following months, the interest rate on housing loans exceeded the 10-year BIRS level. The spread then gradually narrowed to an average of around 150 basis points. Between March and December 2022, the BIRS level was higher, and thus technically, the banks provided housing loans with a negative spread during this period, but the situation reversed again from January 2023. Accordingly, banks may have smoothed market-priced loan rates over time: when BIRS was higher, some of the interest rate increases justified by market developments may have been avoided, and this may slow down the transmission of the normalisation period now that lending rates are higher again.

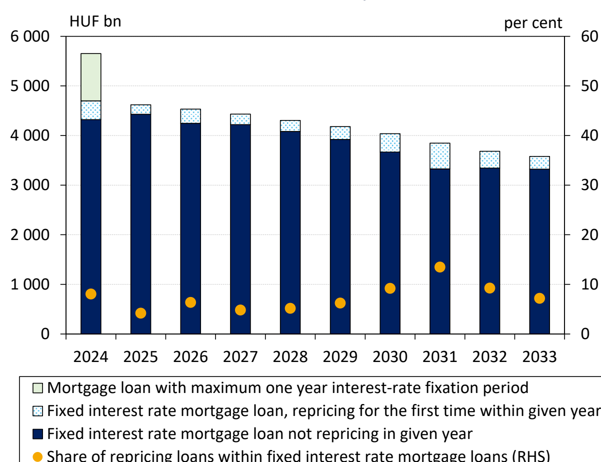
Transmission seems to be more efficient during the period of normalisation when analysed over periods that have the same length. To assess the effectiveness of transmission, we examined the degree of pass-through of changes in the reference rate – the change in the chosen deposit and lending rates as a ratio of the change in the reference rate – in each period. Since the normalisation currently covers a shorter time interval than the interest rate hike cycle, we have also made our calculations for the pass-through of the increase for a uniform length period as that of the normalisation as well. In this case, we found that the rate of deposit transmission during the period of the interest rate hike cycle was below that observed during normalisation, suggesting that deposits, unlike loans, are sticky upwards.

Pass-through of the change in reference interest rates into the change in the HUF deposit and loan interest rates during the period of the interest rate hike and normalization

Period\Instrument	New domestic term deposits	New corporate term deposits	Domestic term deposits	Corporate term deposits	New personal loans	Market-priced loans for house purchase	New corporate loans up to 1 million EUR	New corporate loans over 1 million EUR
Rate hike	0.84	0.98	0.23	0.88	0.79	0.76	0.87	1.04
ratio of the period of time equal to the period of normalization	0.37	0.85	0.02	0.71	-0.73	0.00	0.80	0.51
Normalization	0.69	0.95	0.11	0.89	-0.04	0.44	0.61	0.69

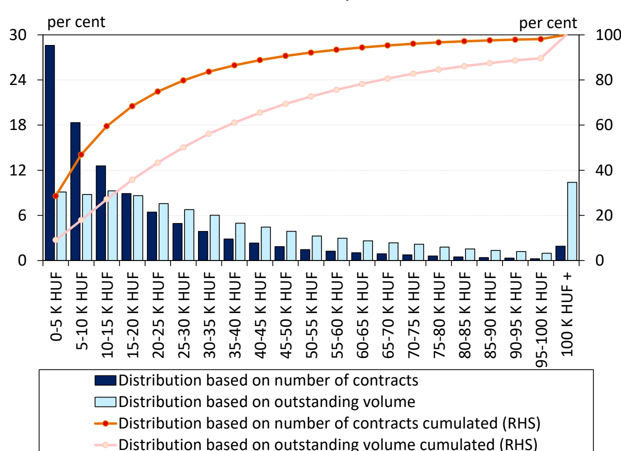
Note: The size of the pass-through means the change in the deposit and loan interest rate as a ratio of the change in the reference rate. Red values indicate the negative coefficient as a result of the controversial change in interest rates. Source: MNB

Chart 36: Next repricing of mortgage loans outstanding in the next 10 years



Note: Based on the day of interest rate repricing, taking into consideration the fixed interest-rate mortgage loans under the interest rate cap, and filtering out maturing loans. Mortgage loans outstanding in the credit institution sector in 2023 Q2. Fixed interest rate mortgage loans are shown until their maturity, while those with maximum one year interest-rate fixation period are only shown in 2024. Source: MNB

Chart 37: Distribution of affected loans by the nominal increase of instalments after phase-out of the interest rate cap



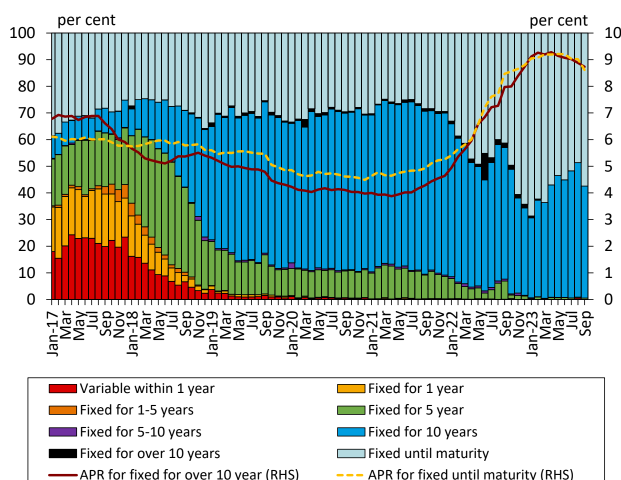
Note: Increase in instalment in January 2024, calculated based on the interest rate forward path as of 27 October, on the mortgage loans outstanding in 2023 Q2. Source: MNB

4.2. The interest rate risk of the existing mortgage loan portfolio is moderate

A large part of the mortgage portfolio will not be repricing in the coming years. For loans with fixed interest rates, the interest rate is determined on the basis of the interest adjustment rates, and for variable rate loans, the interest rate is determined on the basis of the spread adjustment rates. The different benchmark yields (government bond, interest rate swap) influence the development of the instalments. From an interest rate risk point of view, it is favourable that only a minority of mortgage loans with fixed interest rates will have an interest rate repricing date in the near future: 8 per cent of the fixed-rate mortgage loans outstanding in 2024 and 4 per cent in 2025 (Chart 36). Nevertheless, in the case of almost 25 per cent of the fixed-rate mortgage loans repricing in 2024–2025, the basis of the interest adjustment rate is calculated from an index incorporating 125 per cent of the government bond yields. This means that the rise in yields in recent years may be more pronounced in repricing for these loans. The share of variable-rate mortgage loans, which are most exposed to interest rate risk, is declining, and only accounted for 17 per cent of the mortgage loan portfolio in 2023 Q2. These loans typically have a low outstanding principal amount (median: HUF 2.5 million) and short residual maturity (median: 7 years), which reduces their interest rate sensitivity.

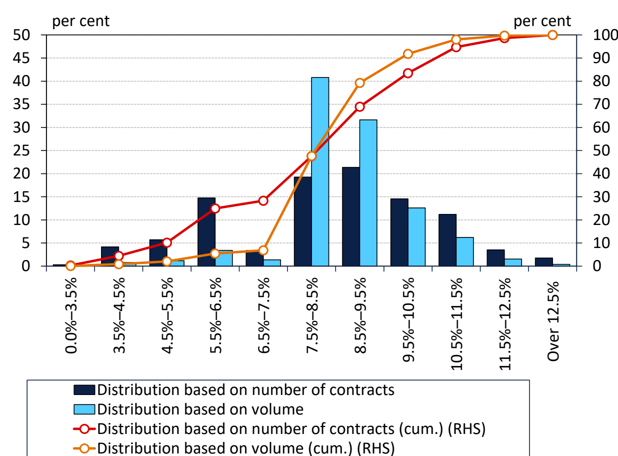
Under the current rules, the interest rate cap protects customers from rising repayments until the end of 2023. The interest rate cap, which will remain in place until the end of 2023, covered 21 per cent of the mortgage loan portfolio (HUF 1,200 billion) and 37 per cent of contracts (300,000 contracts) at the end of June 2023. If the measure were to be phased out, the potential increase in instalments would remain moderate for most contracts (Chart 37). While the typical (median) increase is expected to be around HUF 11,000 (27 per cent), some contracts are considered more vulnerable in this respect: 26 per cent of the contracts in the interest rate cap (77,000 contracts) would see an instalment increase of more than 50 per cent or a nominal increase of more than HUF 50,000. Almost all of these contracts are loans with a maximum 1-year interest-rate fixation period, half of which were concluded after 2010. Their interest rate sensitivity stems from the long residual maturity (median: 14 years), however their outstanding loan amount is relatively low (median: HUF 6 million)

Chart 38: Distribution of newly disbursed housing loans by interest-rate fixation periods, and loan APR



Note: Volume weighted average APR. Source: MNB

Chart 39: APR-distribution of newly disbursed market-based housing loans (September 2023)



Source: MNB

especially if we take into account the significant increase in wages in recent years.

For housing loans taken out in a high interest rate environment, interest rates do not automatically follow the normalisation of yields. For market-based housing loans, the introduction of the Certified Consumer-friendly Housing Loan products and the differentiated borrower-based measures according to the interest-rate fixation period have virtually eliminated the issuance of interest-sensitive variable-rate products since 2019 (Chart 38). Since 2021, a 10-year interest rate fixation period or fixation until the end of maturity have been the prevailing practice. In the period preceding the interest rate hikes, it was advisable for customers to fix their loans' interest rate for as long as possible. By contrast, in the current interest rate environment, a new type of risk is posed if the interest rate paid by the customer remains high despite a future reduction in yields. This risk could be addressed by encouraging future loan refinancing.[19]

A voluntary bank interest rate ceiling could lead to lower housing loan interest rates in the coming months. According to the recommendation of the Government, from 9 October 2023 onwards, commercial banks should implement a voluntary interest rate ceiling, which – according to the October recommendation – is a maximum of 8.5 per cent APR in case of the newly concluded housing loan contracts. The ceiling may lower the cost of taking out a housing loan for some clients, but the price limit may result in crowding-out of some borrowers from the market. In 2023 September, newly contracted, market-based housing loans amounted to HUF 40 billion, with around half of this (48 per cent) contracted below the 8.5 per cent APR ceiling by the banks (Chart 39). The number of new contracts shows a similar distribution, with almost half of these being below the 8.5-per cent limit in September. According to the first reactions after the recommendation was made official, many banks reduced the interest rates in their Lists of Conditions, but several institutions also reduced some of their previously typical discounts.

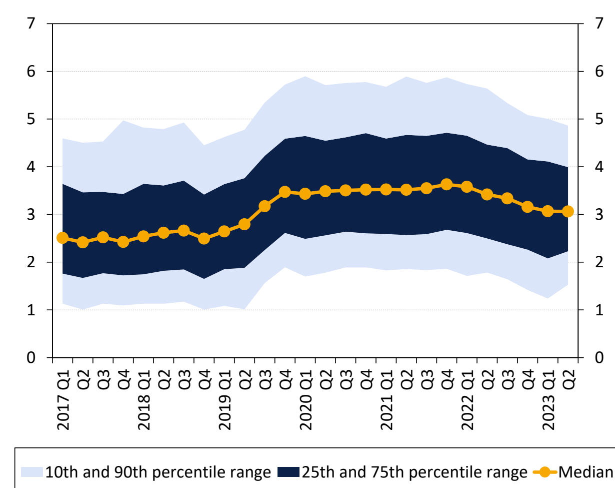
[19] For more detail, see: MNB Macroprudential Report, 2022, Chapter 13, and Macroprudential Report 2023, Chapter 2.

Table 1: Main risk indicators of newly disbursed housing loans

Risk indicator	2021 Q4	2022 Q4	2023 H1
Average volume-weighted LTV (%)	54.0	48.9	50.7
Average volume-weighted DSTI (%)	32.9	34.6	35.0
Share of volume of contracts with above 40 DSTI and above 70 LTV (%)	8.8	10.2	11.2
Share of volume of contracts with large (above 4 times the average annual net wage) contract size	52.6	40.6	42.2
90th percentile of real monthly income (thousand HUF)	801.7	742.1	769.7

Note: DSTI: debt-service-to-income ratio. LTV: loan to value ratio. In case of real income, the net total reported income of debtors and co-debtors has been discounted with a CPI-based real factor of 2015=100 per cent. The FGS Green Home Programme has been excluded from the data. Source: HCSO, MNB

Chart 40: Distribution of the debt-to-income ratio of newly disbursed housing loan accumulating transactions



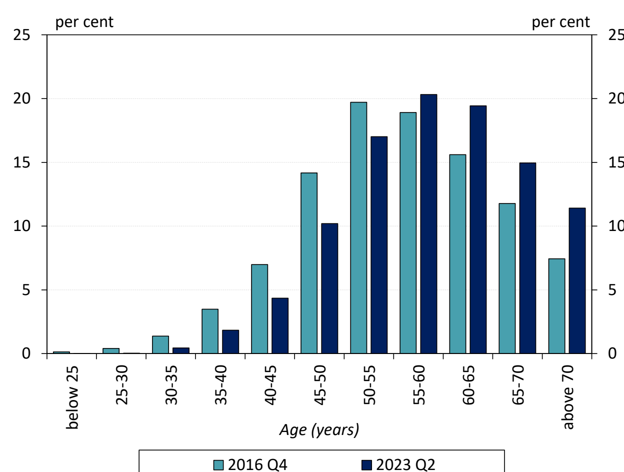
Note: Debt-to-income ratio (DTI): the total sum of loans as a ratio of the annual income of the debtor. In order to calculate the DTI, we aggregated those housing loans of the debtor, which have been taken out at the same time, and we added those prenatal baby support loans and personal loans taken out a maximum of 180 days before the housing loan(s), and we compared this sum to the annual income. In case of the prenatal baby support loans. In the case of prenatal baby support loans, we considered the co-debtors as debtors. We only took those debtors into consideration, who have taken out more than one housing loan at the same time. The FGS Green Home Programme has been excluded from the data. Source: MNB

4.3. Overall, new loans disbursed in the high interest rate environment do not pose a risk to financial stability

The volume of housing loan contracts that are overindebted in terms of income or collateral remains low. In the higher inflation and interest rate environment, and with housing prices rising significantly in recent years, close monitoring of the tight income and collateral position is warranted. In 2023, the share of large-amount housing loan contracts (which amount to over four times the respective average annual net income) increased within new issuance. In parallel with this and the slowdown in house price dynamics, the average loan-to-value (LTV) ratio of newly issued housing loans rose by 2 percentage points to 51 per cent in half a year (Table 1). At the same time, the average debt-service-to-income (DSTI) ratio remained virtually stagnant. This is also due to an increase in the share of higher earners among borrowers. The increase seen in the 90th percentile of the real income distribution of borrowers may have partially offset the effect of higher loan amounts. The share of housing loan contracts with a significantly tight position (above 40 per cent DSTI and above 70 per cent LTV ratio) increased to 11 per cent in new disbursements and is still considered low.

The debt burden of 'credit-accumulating' borrowers is high. Some of the clients who take out a newly issued housing loan also supplement it with additional housing loan(s), a prenatal baby support loan or a personal loan. Between the introduction of the prenatal baby support loan in July 2019 and 2023 Q2, the average share of these 'credit accumulating' transactions was 22 per cent, and in 2023 H1 24 per cent of transactions involved credit accumulation. The average of the combined loan amounts for the debtors of these transactions was much higher in 2023 Q2 (HUF 26 million) than the average amount calculated at the contract level (HUF 15 million). This results in a higher debt-to-income ratio (Chart 40): the top 10 per cent of new customers most indebted in this sense had a debt burden equal to almost six times their annual income in 2020–2021. In 2023 Q2, this ratio fell below 5, partly due to the increasing weight of the higher income segment – in addition to the fact that high debt commitments are more difficult due to the DSTI limits that become more effective in the current high interest rate environment.

Chart 41: Distribution of housing loans outstanding by the debtors' age at maturity



Note: Volume-weighted distribution. Based on the average age of the debtors and co-debtors belonging to the contract. Source: MNB

Table 2: Main indicators of personal loans

	2021	2022	2023 H1
Personal loans disbursed by credit institutions: Share of volume of loans disbursed for under HUF 400,000 real monthly income (%)	78.1	79.9	84.8
Personal loans disbursed by financial enterprises: Share of volume of loans disbursed for under HUF 200,000 real monthly income (%)	65.8	67.5	70.4
Personal loans disbursed by credit institutions: Median real monthly income (HUF thousand)	221.4	220.8	217.5
Personal loans disbursed by financial enterprises: Median real monthly income (HUF thousand)	126.4	126.4	125.3
Personal loans disbursed by credit institutions: Median loan size (HUF mn)	1.55	1.59	1.50
Personal loans disbursed by financial enterprises: Median loan size (HUF mn)	0.30	0.30	0.30

Note: In case of income, the net total reported income of debtors and co-debtors. Real income has been counted on the value of year 2015. Source: MNB

The structure of the housing loan portfolio by the age of the borrower at maturity has shifted over the past few years. Government measures in recent years, such as the exchange rate cap[20] and the payment moratorium,[21] have led to an increase in the maturity of loans. Longer maturity is also observed for new housing loans, with new borrowers taking out housing loans for an average of 16 years in 2016 Q4 and almost 19 years on average in 2023 Q2. These trends result in a shift to the right in the age structure of borrowers at maturity, i.e. towards older age groups (Chart 41). While the total outstanding principal amount of contracts of borrowers aged 65 or over at maturity represented 19 per cent of the existing stock of housing loans in 2016 Q4, this share had risen to 26 per cent by 2023 Q2. The financial stability implication of this trend is that retirement, especially in the absence of sufficient savings, can lead to significant negative income shocks and thus reduce the ability to repay.

Loans taken out to restore liquidity may pose a risk. While the transaction-based annual growth rate of total household loans outstanding was just 2.8 per cent in September, consumer loans outstanding grew faster: personal loans outstanding expanded by 7.4 per cent, while overdrafts outstanding increased by 6.3 per cent during this time (accordingly, the former accounts for HUF 1,300 billion and the latter for HUF 148 billion of the HUF 10,000 billion household loans outstanding portfolio). All of this might indicate consumption smoothing and an increase in the importance of liquidity objectives. The income segment most affected by the rising cost of living, with lower wages and the most vulnerable in terms of repayment ability, is under-represented in the customer base of credit institutions and tends to be concentrated in financial enterprises providing small-amount loans. Bank interviews conducted in the context of the Lending Survey suggest that the proportion of customers who use their bank loans (most often overdrafts, credit cards or personal loans) to cover everyday expenses may also be increasing. In terms of income calculated on 2015 level, while 78 per cent of personal loans issued by credit

[20] For contracts covered by the exchange rate cap, the remaining maturity had to be set so that the repayments due after the 60th month from the date of application of the cap did not exceed 115 per cent of the repayments due in the 60th month. Thus, after the period of the exchange rate cap, repayments could increase by up to a maximum of 15 per cent, so that the maturity could be extended if necessary. In the case of the payment moratorium, the maturity will be extended by at least as much as the contract has been in moratorium, but will be longer depending on the interest and fees accrued. (The maturity shall be lengthened so that after the payment moratorium, the sum of the repayments due and the interest and fees accrued during the moratorium and payable in instalments does not exceed the level of the instalment due under the original contract).

[21] See Box 6 of the May 2020 Financial Stability Report for more details.

institutions were taken out with a monthly income below HUF 400,000 net in 2021, by 2023 this figure had risen to 85 per cent (Table 2). In the case of financial enterprises, 66 per cent of personal loans issued in 2021 were taken out by the income segment earning below HUF 200,000, while in 2023 H1 this ratio increased to 70 per cent, i.e. the share of lower income earners among borrowers rose slightly in both cases.[22] At the same time, the median real income of borrowers and the typical loan amount have also stagnated or declined in recent years.

[22] According to the MNB's own online survey, the share of those who spend more than their income has also increased, with the share of those who plan to take out consumer loan over the next year rising since last summer.

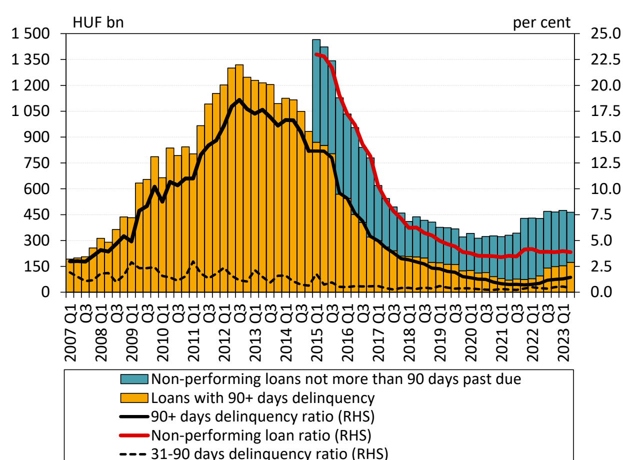
5. Portfolio quality: ratio of non-performing loans remains low, but its composition is changing

The corporate non-performing loan ratio (NPL ratio) has been stagnant since 2022 Q2, standing at 3.9 per cent at the end of June 2023. In the household sector, the NPL ratio declined by 1 percentage point to 3.4 per cent in 2023 H1, in line with the reclassification of former moratorium customers back into the performing category. Accordingly, the banking sector's NPL ratio for the private sector exceeds the EU average by 1.3 percentage points. In the corporate segment, the ratio of loans past due over 90 days increased further, but still accounts for only 1.4 per cent of the corporate loan portfolio. In the household segment, the same ratio has stagnated at 1.5 per cent since March 2022. In the household sector, government measures to curb instalment growth, in addition to debt cap rules and a tight labour market, have contributed to keeping NPL ratios low, while in the corporate sector, high repricing ability, strong liquidity and the SME interest rate cap may have played a key role. However, the uncertain economic outlook, increasing risks in the commercial real estate segment and the phase-out of the interest rate cap pose upside risks to the NPL ratio.

In 2023 H1, the stock of impairment losses on corporate loans increased, while the coverage of impairment losses on the total stock rose to 3.6 per cent. In the household segment, the stock of impairments declined slightly, in line with the significant reclassifications from Stage 3 and Stage 2, partly relating to clients who previously participated in the moratorium, bringing the coverage of the household loan portfolio down slightly to 4.7 per cent at end-June. In both sectors, the Stage 3 loan coverage ratio increased the most compared to the end of 2022, rising by 2.2 percentage points in the household sector and 3.4 percentage points in the corporate segment. The share of the Stage 2 category, which indicates increased risk, decreased in the household segment and increased in the corporate sector over the half-year. The share of the latter is high by international standards, and its coverage level is also outstanding in a European comparison, reflecting the prudent functioning of the banking system.

5.1. The share of delinquent loans increased in the non-performing corporate portfolio

Chart 42: Non-performing corporate loans of the credit institutions sector

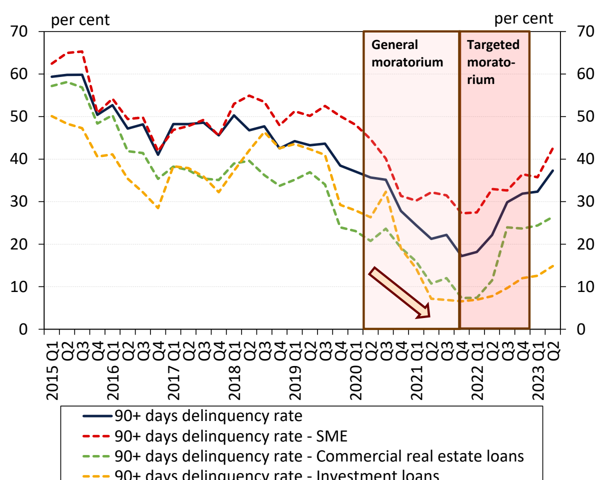


Note: The definition of non-performing loans changed in 2015. From then on, in addition to loans over 90 days past due, loans less than 90 days past due where non-payment is likely are also classified as non-performing. Calculated by customers until 2010 and by contracts from 2010. Source: MNB

The corporate NPL ratio is stagnating at a moderate level. The NPL ratio for corporate loans remained unchanged at its end-2022 level, at 3.9 per cent in 2023 H1 (Chart 42). The stock and the share of loans over 90 days past due also increased slightly, with the latter rising by 0.2 percentage point to 1.4 per cent, which is twice as high as the end-2021 figure. The share of the stock of loans not past due more than 90 days but in default declined by 0.2 percentage point to 2.4 per cent in 2023 H1. The corporate NPL ratio had declined to 3.7 per cent by August 2023, after stagnating since June 2022. The high repricing capacity of the corporate segment[23] on the revenue side played a key role in the stability of the moderate NPL ratio, while the strong corporate liquidity and the SME interest rate cap also had a significant impact, which together are able to offset the increase in risks caused by the uncertain economic environment.

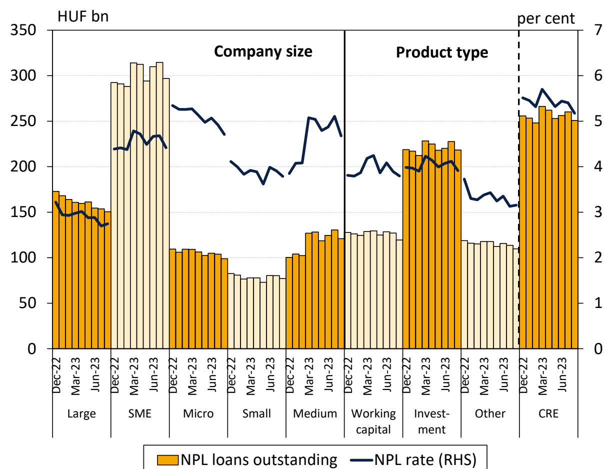
[23] For a more detailed discussion of profit-driven corporate inflationary price increases, see Box 3–2 of the June 2023 Inflation Report.

Chart 43: Loans over 90 days past due as a share of non-performing corporate loans



Source: MNB

Chart 44: Non-performing corporate loan ratio by company size and product type



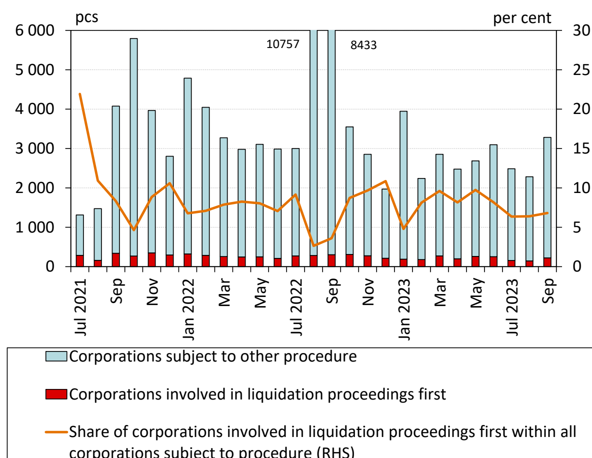
Source: MNB

The share of loans over 90 days past due in the non-performing portfolio increased, but is below the pre-moratorium level. The share of loans over 90 days past due within the total non-performing portfolio continued to increase in 2023 H1 in the corporate sector, reaching 37 per cent at the end of June (Chart 43). The payment moratorium played a major role in this, as the number of days in arrears was suspended during the moratorium, so that the non-performing stock could only increase through an increase in credit risk without further delays. The increase in the ratio was highest for small and large corporations by company size, and by sector for manufacturing, and trade and repair of motor vehicles. However, the share of loans over 90 days past due at the end of June remains just over 10 percentage points below the average share in the years before the general moratorium was introduced.

The NPL ratio for medium-sized companies increased, while that for large companies declined in the first eight months of 2023. Between December 2022 and August 2023, the NPL ratio for medium-sized companies increased by 0.8 percentage point, and, in conjunction with the NPL ratio for micro companies decreasing in the period under review, was the highest by company size at the end of the period, at 4.7 per cent (Chart 44). Default rates in the medium-sized enterprise segment rose most in the manufacturing and construction sectors. This was offset by a decline in the micro and small enterprise segment, resulting in an unchanged NPL ratio for the SME segment of 4.4 per cent at the end of August 2023. The default rate of large corporate loans, on the other hand, fell to 2.7 per cent in the first eight months of the year. Broken down by loan purpose, there were no material changes in the working capital and investment loan portfolios, while the NPL ratio for other loans declined. The NPL ratio for commercial real estate loans stood at 5.2 per cent in August 2023, with all sub-segments showing a decline or stagnation in the NPL ratio (the highest ratio was observed for hotel loans, which previously had had a high moratorium participation, and the lowest for office loans). The growing risks in the commercial real estate market and the high proportion of loans with variable interest rates within the portfolio may foreshadow an increase in the NPL ratio, but the proportional exposure of banks' regulatory capital is much lower than during the 2008 crisis.

The number of corporations subject to legal procedure increased, but only a small share of that can be related to payment difficulties. Between 2023 January and

Chart 45: Number of corporations subject to legal procedure

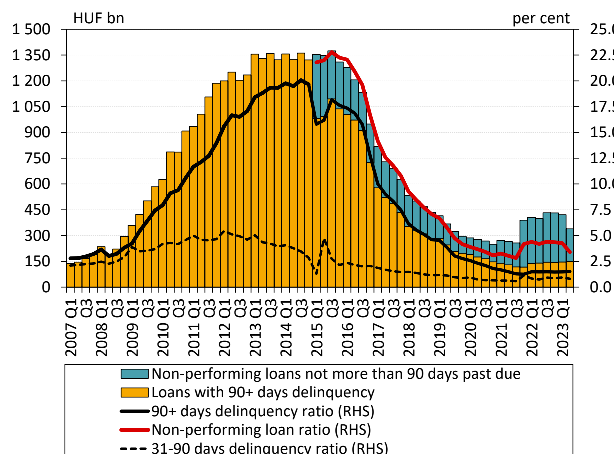


Note: The company is considered to be involved in liquidation proceedings in the first place, if no other proceedings preceded the liquidation. Source: HCSO

September, there was an increasing trend in the number of economic organisations subject to liquidation, bankruptcy, voluntary liquidation and forced deregistration procedures, albeit with a high level of volatility. However, in the case of a significant proportion of the liquidations, it can be said that they were preceded by other types of procedures, and the initiation of the liquidation often occurred for technical reasons. We can get a more accurate picture of payment difficulties in customer-supplier relationships if we examine cases where the liquidation was not preceded by another procedure. The number of these enterprises decreased by 20 per cent between September 2022 and September 2023 compared to the previous year. The share of these companies was around 7-8 per cent this year on average (Chart 45). All this suggests that there are currently no systemic payment difficulties in the corporate sector, in line with the low level of non-performing bank loans.

5.2. The quality of the household loan portfolio has improved due to the reclassification of customers, who previously participated in the moratorium, into the performing category

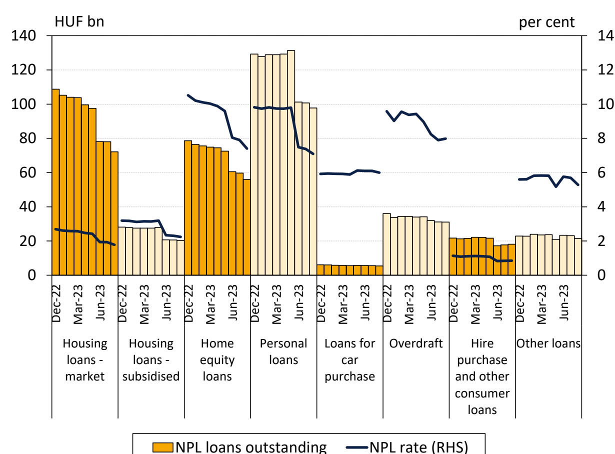
Chart 46: Non-performing household loans of the credit institutions sector



Note: The definition of non-performing loans changed in 2015. From then on, in addition to loans over 90 days past due, loans less than 90 days past due where non-payment is likely are also classified as non-performing. Calculated by customers until 2010 and by contracts from 2010. Source: MNB

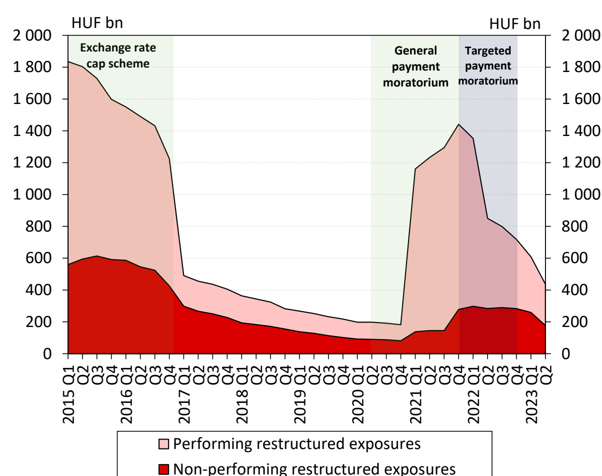
The reclassification of customers who participated in the moratorium reduced the share of non-performing household loans. The household NPL ratio fell from 4.4 per cent at the end of 2022 to 3.4 per cent in mid-2023 (Chart 46). The decline in the NPL ratio was driven by a decline in the stock of loans not past due more than 90 days but classified as non-performing, while the volume and share of loans past due more than 90 days remained unchanged, with the latter now stagnating at 1.5 per cent since March 2022. The improvement in portfolio quality has been supported by active portfolio cleaning, in particular for uncovered loans, in parallel with the reclassification of customers who participated in the moratorium back to performing. Almost 90 per cent of loans in arrears within 90 days are considered performing, i.e. banks do not consider recent delays to be a sign of permanent payment difficulties. The NPL ratio continued to decline in August, falling to 3.2 per cent at the end of the month, according to the latest data. A detailed analysis of the portfolio quality of the household loan contracts that exited the moratorium is presented in Box 4.

Chart 47: Non-performing household loans by product type



Source: MNB

Chart 48: Composition of restructured household loans by performance



Source: MNB

The NPL ratio has declined substantially for most product types. By August 2023, the non-performing loan ratio for both market and subsidised housing loans had fallen by 0.9 percentage point compared to the end of 2022 (Chart 47). Thus, it remains true that the NPL rate for subsidised loans is slightly higher than that for market housing loans. A significant decrease of 3 percentage points was observed for home equity loans and personal loans, and although the NPL rate for overdrafts has also decreased, this product type has the highest default rate of 8 per cent. Loans for car purchase are the only product for which the NPL ratio increased slightly compared to the end of last year.

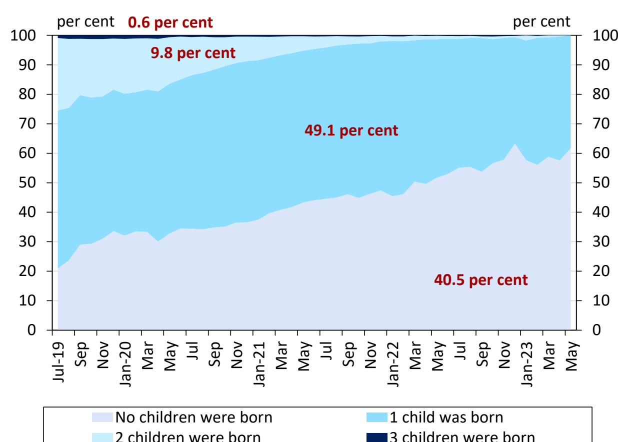
The restructured household loan portfolio has decreased by HUF 1,000 billion since December 2021. In the context of the general moratorium, the restructured household loan portfolio increased by nearly HUF 1,000 billion at the beginning of 2021 (Chart 48). This increase was driven by the classification of customers already in moratorium for more than 9 months as restructured, which could however be overruled on a case-by-case basis. Subsequently, the restructured portfolio increased steadily during 2021 and started to decline from 2022 onwards, thanks to the preferential treatment of customers exiting the moratorium.[24] Between December 2021 and June 2023, the total restructured portfolio decreased by HUF 1,000 billion, including a reduction of the non-performing portfolio by HUF 100 billion, which contributed to a substantial reduction in the NPL ratio.[25] Despite the reduction, the restructured loan portfolio of the household sector remains almost two and a half times the end-2020 level. With 27 per cent of performing restructured loans currently under monitoring, the restructured loan portfolio in the household segment may further decline in 2023.

Non-compliance with the non-financial conditions attached to family subsidies carries a risk. The instalments and principal debt on a prenatal baby support loan are directly related to the number of children the borrower has after taking out the loan. In addition, interest rate subsidised loans linked to the Home

[24] A restructured classification can be terminated after the 6-month monitoring period instead of the earlier 2-year monitoring period if the customer has not been delinquent for more than 30 days during this period, the amount of arrears does not exceed EUR 100 and there are no circumstances that would trigger restructuring in their own right. By removing the restructured rating, the underlying impairment can also be released. Source: MNB Executive Circular on using macroeconomic information and the factors indicating a significant increase in credit risk under the IFRS 9 standard.

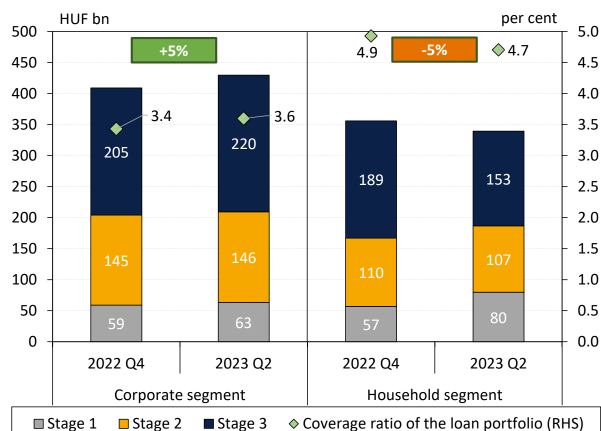
[25] In the case of non-performing restructured loans, after a 1-year monitoring period, the contract can be classified as a performing but still restructured loan.

Chart 49: Estimated trends in childbearing related to prenatal baby support loans since the borrowing



Note: By the month of the borrowing. In red, the distribution calculated for all debtors, regardless of the date of the borrowing. Source: MNB

Chart 50: Impairment stocks in the corporate and household loan portfolios



Note: Credit institutions sector. Loans measured at amortised cost. Source: MNB

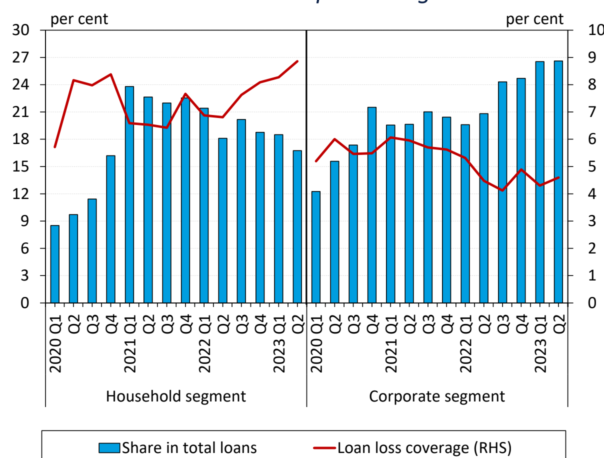
Purchase Subsidy Scheme for Families (HPS) were also available for children not yet born. Between July 2019 and the end of September 2023, a total of 233,000 prenatal baby support loan contracts were signed. For the HPS (including the Rural HPS), 226,000 subsidy contracts and 82,000 loan contracts were signed between January 2016 and September 2023. By May 2023, based on our estimation, approximately 40 per cent of prenatal baby support loan debtors had not yet had a child; almost half had one child, 10 per cent had two children (Chart 49). Nearly 80 per cent of those who took out prenatal baby loan in July 2019 and had time until the middle of 2024 to have their first child with maintaining interest exemption, have already the child born. If prenatal baby support loan debtors fail to meet the legal deadline for childbearing, they will face a substantial increase in their financial burden. For banks, the resulting risks are limited because of the state guarantees linked to these loans, the use of which is currently minimal. In the case of HPS, non-compliance with the agreed children by the deadline also means a significant increase in the burden, but in the case of these loans, we do not have data on the number of children born.

5.3. Unchanged coverage, changing portfolio composition

In 2023 H1, there was no significant change in impairment coverage. The stock of impairment losses on corporate loans increased by 5 per cent, while that of household loans decreased by 5 per cent in 2023 H1 (Chart 50). At the same time, the total corporate loan portfolio grew by 3 per cent and the household portfolio by 1 per cent. As a result, the coverage of the household loan portfolio, measured at amortised cost, decreased by 0.2 percentage point to 4.7 per cent, while that of corporate loans increased by 0.2 percentage point to 3.6 per cent. In 2023 H2, the stock of impaired loans in the household segment may continue to decline in line with the reclassification to Stage 1 of customers who previously participated in the moratorium, while the stock of loan impairments in the corporate sector may rise on account of the uncertain economic environment.

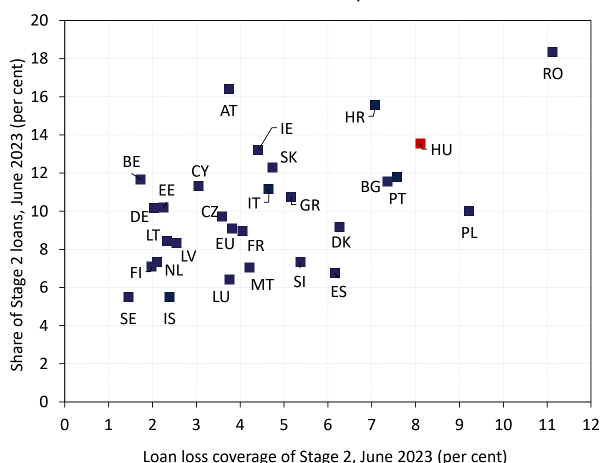
The share of elevated-risk Stage 2 loans in the corporate segment increased. By impairment category, the coverage of Stage 3 loans increased the most in both segments compared to the end of 2022. For corporate Stage 3 loans, it increased by 3 percentage points to above 50 per cent and for the household portfolio by 2 percentage points to 54 per cent. The change in the composition of the loan

Chart 51: Share and coverage of Stage 2 loans in the household and corporate segments



Note: Credit institutions sector. Loans measured at amortised cost. Source: MNB

Chart 52: Loan loss coverage of Stage 2 loans in an international comparison



Note: EBA data are based on a sample consisting of 164 banks. Based on non-consolidated data. Hungarian data is based on three banks (OTP, K&H, MBH). Source: EBA

portfolio at amortised cost by Stage was opposite in the corporate and household sectors. While in the former, the share of elevated risk (Stage 2) loans increased by 2 percentage points at the expense of Stage 1 loans over these six months, in the household segment the share of Stage 3 loans decreased by 1 percentage point and that of Stage 2 loans by 2 percentage points, with a 3-percentage point increase in the share of Stage 1 loans. A steady improvement in portfolio quality has been observed in the household segment since the end of 2022, with the share of Stage 2 loans – with a high coverage of almost 9 per cent – falling to a level not seen since the end of 2020, at 17 per cent (Chart 51). In the corporate sector, however, the share of Stage 2 loans has been rising since mid-2022, while impairment coverage has not changed materially since 2022 H2 and is fluctuating around 4.5 per cent.

Loan loss coverage of the Stage 2 classified portfolio is relatively high by European standards. In 2023 Q2, both the share and the coverage of elevated-risk (Stage 2) loans at Hungarian banks were relatively high by EU standards (Chart 52). The share of Stage 2 loans in Hungary was 4 percentage points above the EU average and 3 percentage points above the average for Visegrad countries. The domestic figure for impairment coverage was 4 percentage points above the EU average and 2 percentage points above the Visegrad average.[26] According to the European Banking Authority (EBA) report,[27] the domestic share of non-performing bank loans of the private sector is 1.3 percentage points above the EU average. Currently this gives Hungary the third highest NPL ratio, despite a significant reduction in a six-month comparison. Overall, portfolio quality is therefore below the EU average, but impairment coverage is high in a European comparison.

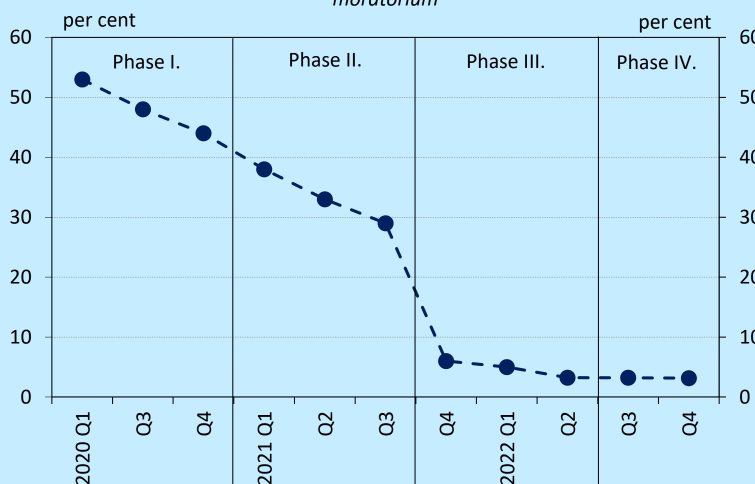
[26] It is important to note that the differences in coverage across countries may be influenced significantly by composition effects, such as the differences between the shares of the household and corporate sectors.

[27] EBA data are available here.

BOX 4: DETAILED ANALYSIS OF HOUSEHOLD LOANS THAT WERE PREVIOUSLY IN THE MORATORIUM IN TERMS OF NON-PERFORMANCE AND IMPAIRMENT ACCOUNTING

In order to cushion the adverse economic impact of the COVID-19 pandemic, the Government introduced a general and automatic payment moratorium on 19 March 2020, which – after several extensions, in a reduced form at the end – was in effect until the end of 2022. The payment moratorium, consisting of four phases in total, covered around half of total household loans at the start of the first phase. This share fell to 29 per cent by the end of 2021 Q3 due to the expansion of the total stock and exits from the programme, and then to 6 per cent when the narrowed moratorium came into effect in November 2021. The moratorium was phased out at the end of December 2022, so it is worth examining the afterlife of loan contracts that were previously under the moratorium in terms of portfolio quality.[28]

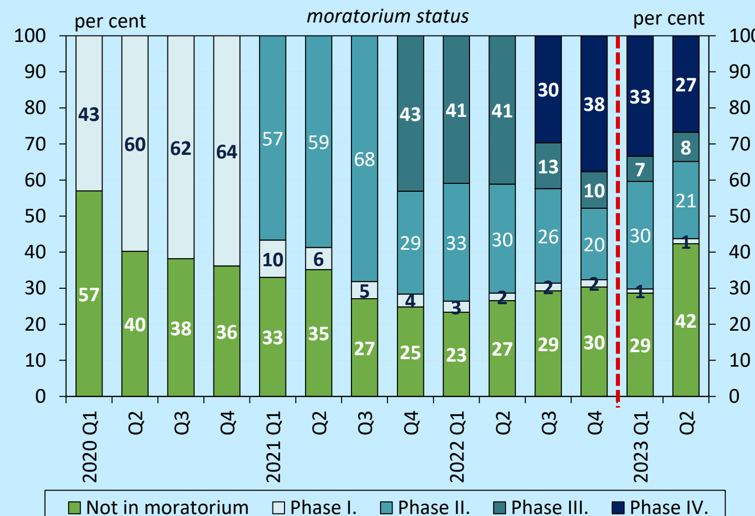
The evolution of the proportion of household loans under moratorium



Note: Credit institution sector only, by volume. Source: MNB

The decline in the stock of non-performing household loans seen in 2023 H1 was linked to contracts previously in moratorium. The share of loan contracts participating in any stage of the moratorium in the total non-performing loan portfolio decreased from 70 per cent to 58 per cent between December 2022 and June 2023. The decrease was due in large part to the reclassification of transactions that were also in the fourth phase of the moratorium back to the performing category. For the latter, a further decline is expected during the year as customers return to their previous payment routine observed over a sufficiently long period of time. However, for the other phases, depending on the time that has elapsed, the classification as non-performing may indeed be due to financial difficulties.

Distribution of non-performing household loans according to moratorium status



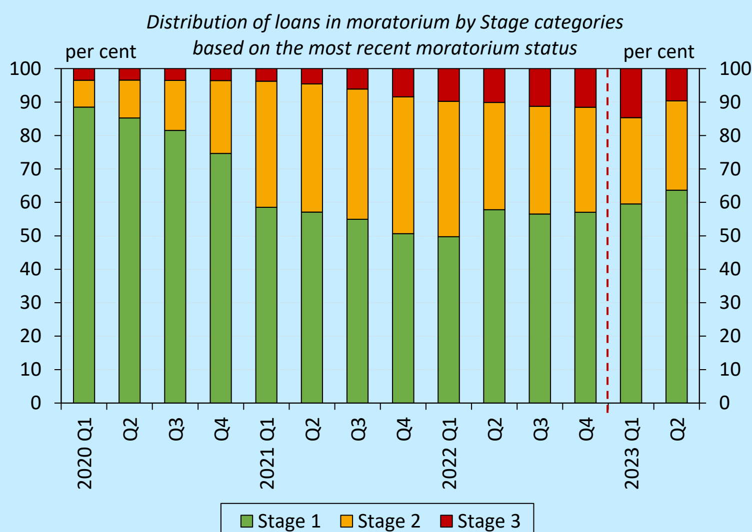
Note: The loans participating in the moratorium were classified based on the most recent moratorium status. Source: MNB

The share of Stage 2 and Stage 3 loans in the stock previously in the moratorium decreased in favour of Stage 1 loans in 2023 H1. Following the phase-out of the measure, the share of Stage 2 loans fell the most, dropping by 5 percentage points, among loans that were previously in the moratorium, but the share of Stage 3 loans also fell (by 2 percentage points), while the share of Stage 1 loans rose. This means that 10 per cent of contracts previously in the moratorium at any time belonged to Stage 3, 27 per cent to Stage 2 and the remaining 63 per cent to Stage 1 at the end of June 2023. For Stage 3 contracts, the decline was driven by loans in phase IV of the moratorium, while for Stage 2 loans, the decline was driven by the

[28] For a detailed analysis of the payment difficulties of debtors leaving the moratorium, see: Ákos Aczél – Nedim Márton El-Meouch – Gergely Lakos – Balázs Spéder (2023): Household Loan Repayment Difficulties after the Payment Moratorium – Hungarian Experience from the Covid-19 Pandemic. *Financial and Economic Review*, 22 (1), March 2023, pp. 21–56.

reclassification of loans still in moratorium in the second phase. As the time spent in moratorium increased, the composition of the loan stock in the moratorium by Stage category shifted increasingly towards the higher-risk Stage 2 and Stage 3. While at the start of the general payment moratorium, Stage 1 represented 88 per cent of the participating stock and Stage 3 only 3 per cent, for loans also participating in the last phase of the moratorium, Stage 1 represented 1 per cent and Stage 3 55 per cent, based on outstanding stocks at the time of phasing out the moratorium at the end of 2022. This is also in line with the MNB's recommendation,[29] which proposed classifying the exposure as restructured for participation in the first and second phases of the moratorium exceeding 9 months, which is also a Stage 2 indicator, but which could be overruled on a case-by-case basis if no financial difficulties existed. This means that, within the loan contracts participating in the general moratorium only, Stage 1 loans had the largest share, while for loans which also participated in the narrowed moratorium, Stage 2 loans had the largest share at the end of June 2023.

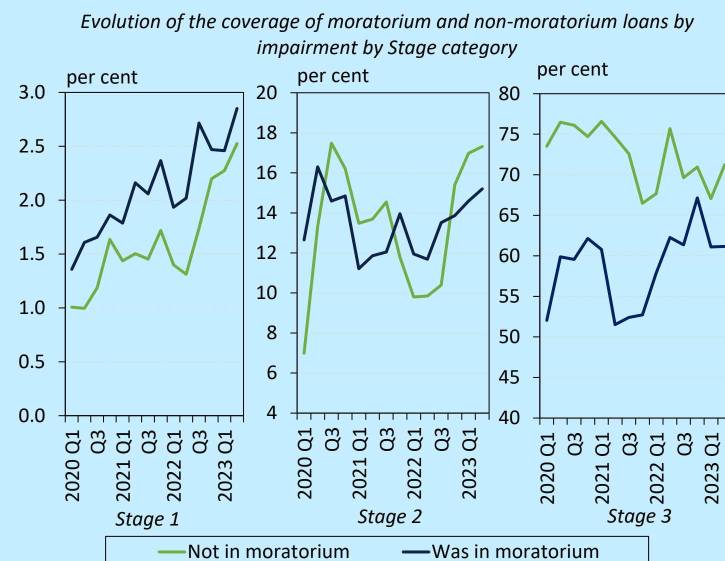
Distribution of loans in moratorium by Stage categories based on the most recent moratorium status



Note: The moratorium portfolio includes loans in moratorium at any time between March 2020 and December 2023. Exposures valued at amortised cost. Source: MNB

Of the transactions that were previously in moratorium, the average impairment coverage of Stage 1 loans is higher, while for Stage 2 and 3 loans it is lower than for loans that did not participate in the moratorium. Credit institutions could decide on a case-by-case basis which risk category to assign to the contracts entering the moratorium. The majority of the former moratorium portfolio remained Stage 1, but its impairment coverage was consistently higher than that of non-moratorium contracts. The latter dichotomy was also observed before the launch of the moratorium, and thus it was presumably the inherently riskier transactions within the Stage 1 category that participated in the moratorium. In addition, a rise in the level of coverage was observed as the time spent in the moratorium increased. By contrast, contracts that were reclassified as Stage 2 and Stage 3 typically had lower average coverage compared to non-moratorium loans. This is also due to the fact that the moratorium did not allow for the quantification of many risks and the recalibration of the models used, which the MNB has sought to address by imposing portfolio-level management adjustments, so-called overlays, in a management circular. The expert adjustment represents a lump-sum expected impairment for each portfolio based on risk factors that are not or not fully captured by the models used.

Evolution of the coverage of moratorium and non-moratorium loans by impairment by Stage category



Note: The moratorium portfolio includes loans in moratorium at any time between March 2020 and December 2023. Exposures valued at amortised cost. Source: MNB

[29] Management Circular on the use of macroeconomic information and factors indicating significant increase in credit risk for the purposes of IFRS9.

As the moratorium ended, a detailed analysis of contracts taking advantage of the possibility of a suspension of payments is important for the evolution of portfolio quality. The more significant decline in the household NPL ratio in 2023 H1 was linked to loans that previously participated in the moratorium, which are expected to decline further as customers return to their previous payment routines observed over a sufficiently long period of time. The composition of household loans previously in the moratorium by Stage category has improved but is still worse than that of contracts not included in the moratorium. Furthermore, in the case of loans that previously participated in the moratorium, average coverage in the Stage 1 category was higher, while in the case of Stage 2 and 3 loans, it was lower compared to non-moratorium loans.

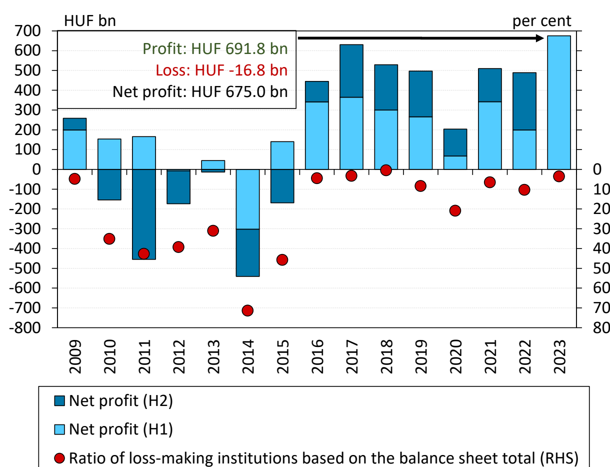
6. Profitability and capital adequacy: extremely high, unsustainable profitability, appropriate capital adequacy

The credit institutions sector achieved a historically high profit after tax of HUF 675 billion in 2023 H1, according to individual unconsolidated data, which was 240 per cent higher than the profit in the same period of the previous year and 39 per cent higher than the full-year profit in 2022. The consolidated profit, which also includes the profits of domestic and foreign affiliates, amounted to HUF 943 billion in the same period. The increase in profit after tax was driven to the greatest extent by a surge in interest income, a significant part of which was due to interest paid on liquidity deposited with the central bank. Net impairment charges reduced the banking profit to a much smaller extent than in 2022 H1. Among the items that had a negative impact on the result were the recognition of the extra profit tax and the increase in operating costs, as well as the impact of the interest rate cap measures. The sector's 12-month rolling return on equity (RoE) increased sharply, from 9 per cent at the end of 2022 to nearly 17 per cent, and the return on assets (RoA) rose from 0.7 per cent to 1.3 per cent.

Banking system profits have increased significantly, but this high level of profitability is not sustainable in the medium term. The net interest income of banks will clearly decline in the future as the base rate of the central bank declines in parallel with the disinflationary trend; in the medium term, efficiency gains and deepening credit penetration could again be the main sources of profitability in the sector.

The consolidated capital adequacy ratio (CAR) of the banking system stood at 18.8 per cent in June 2023, similar to the end of 2022, while the CET1 ratio reached 16.3 per cent. The unaudited result could potentially increase the CAR by 1 percentage point, depending on dividend payment plans. The increase in total risk exposure amount (TREA) over the first six months was mainly driven by credit risk exposure, while the increase in own funds was driven by the expansion of the retained earnings and Tier 2 capital instruments from previous years. The credit institutions sector's free capital above the overall capital requirement amounted to HUF 1,744 billion (4.6 per cent on a TREA basis). Despite the raising of the combined capital buffer requirement this year, 92 per cent of the banking system would have a free buffer above 4 per cent, based on the full interim result. A prudent, forward-looking dividend policy for 2023, in light of the expected moderation in the extreme profit of this year, is of importance for the future development of the capital position. Leverage ratios exceeded 4 per cent for all banks and 6 per cent for 98 per cent of them.

Chart 53: After-tax profit and loss of the credit institutions sector

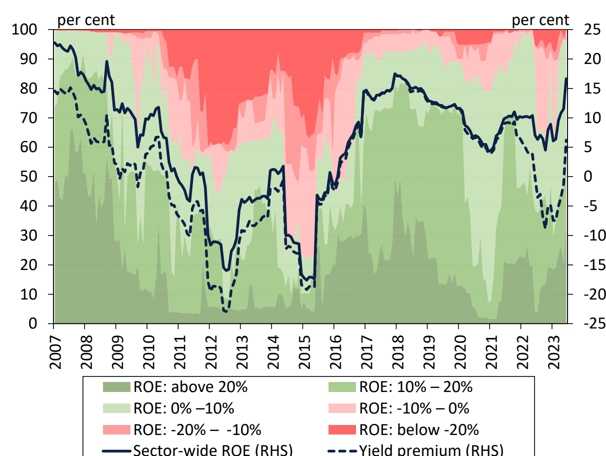


Note: Based on non-consolidated data. Source: MNB

6.1. The extremely high profitability is caused by unsustainable processes

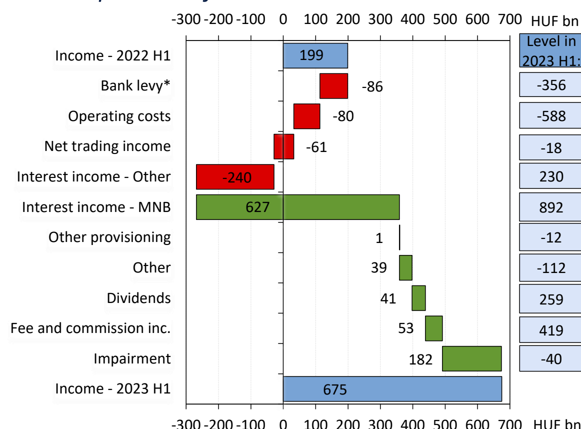
The credit institutions sector achieved record profit after tax in 2023 H1. Based on stand-alone, non-consolidated data, the credit institutions sector registered a profit of HUF 675 billion in 2023 H1. This not only represents the highest first-half profit in the last 20 years in nominal terms, it also sets a historic record when full-year results are taken into account (Chart 53). At the individual level, on a balance sheet basis, less than 4 per cent of the sector booked a negative first-half result, with institutions collectively recording a loss of HUF 17 billion. Consolidated profit, which includes both domestic and foreign affiliates, amounted to HUF 943 billion in the period under review and was also significantly, 737 billion HUF higher than the total profit for 2022 H1 and nearly HUF 80 billion higher

Chart 54: Distribution of credit institutions according to the 12-month rolling after-tax return on equity



Note: Distribution weighted by total assets. Monthly time series based on non-consolidated data. The yield premium is the difference between the 12-month rolling ROE and the yield on the one-year Discount Treasury Bill. Backward-looking yield for the ROE, forward-looking yield for the Discount Treasury Bill. Source: MNB

Chart 55: Annual changes in after-tax income components of the credit institutions sector



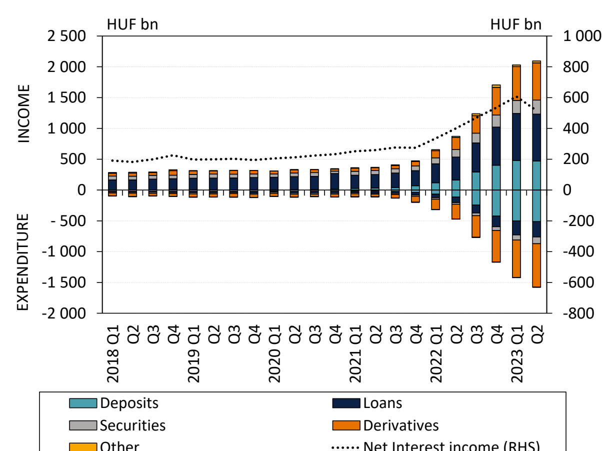
Note: Nominal values of income components at the end of June 2023 are shown on the right-hand side. Bank levy* includes the combined change in the 'normal' bank levy and the extra profit tax. Interest income – MNB does not include interest income on derivative transactions related to MNB. Source: MNB

than the total profit for 2022. At the end of June 2023, the ratio of loss-making institutions in terms of total assets was only 0.2 per cent based on consolidated data. In the same period, the profit of financial enterprises declined by HUF 9 billion to HUF 51 billion.

The 12-month rolling return on equity (RoE) increased significantly and rose above the risk-free rate of return again. With equity expanding, the 12-month rolling RoE rose by 7.7 percentage points on a half-yearly basis to 16.7 per cent at end-June 2023, as a result of a significant increase in nominal earnings. Due to the substantial increase in the indicator and the steep decline in the yield of the one-year Discount Treasury Bill observed in the first six months of the year, the return on equity premium over the risk-free rate of return moved back into positive territory after more than a year, reaching 6.2 percentage points in June 2023 (Chart 54). It is important to note that the accounting treatment of government measures also plays a significant role in the Q2 surge in the profitability indicator: the RoE at the end of 2023 H1 includes only the full amount of the extra profit tax related to the full year, recorded at the beginning of 2023, while it does not include a significant part of the 2022 extra profit tax, typically accounted for in 2022 Q2.[30] As profitability increased, the distribution of profitability of institutions shifted towards higher categories during the first half of the year.

The increase in profit after tax was supported most strongly by the extremely high interest income from the central bank. The net interest income of the Hungarian banking system amounted to HUF 1,122 billion in 2023 H1, of which HUF 892 billion was interest income settled with the MNB.[31] Net interest income thus increased by HUF 387 billion in 2023 H1 compared to 2022 H1, consisting of an increase of HUF 627 billion in net interest income on on-balance sheet items vis-à-vis the MNB and a decrease of HUF 240 billion in net interest income vis-à-vis other sectors (Chart 55). Among the items that reduced profit, taxes on the banking sector reduced profit by a total of HUF 356 billion in 2023 H1, an increase of HUF 86 billion compared to the same period of the previous year. The result was also reduced by an increase in the operating costs of the banking sector, mainly due to a rise of HUF 59 billion in staff-related expenses, while other administrative expenses were HUF 19 billion higher than in 2022 H1. We estimate that the interest rate cap measures, which partly reduced interest income and partly reduced other comprehensive income, may have led to a loss of around HUF 112 billion for the credit institutions sector in 2023 H1.

Chart 56: Changes in components of 3-month interest income in the credit institutions sector



Note: Based on non-consolidated data. Source: MNB

Net impairment losses arising from the difference between impairment charges and reversals in 2023 H1 were HUF 182 billion lower than in the first six months of 2022, when the impairment charges spiked due to Russian and Ukrainian exposures.

The surge in net interest income is linked to unsustainable developments. There was a significant increase of HUF 844 billion in interest income on loans in 2023 H1 compared to 2022 H1, while interest income on deposits on the asset side increased by HUF 670 billion, driven by historically high interest rates on central bank deposits (Chart 56). In 2023 H1, however, interest income on deposit liabilities also increased significantly by HUF 833 billion compared to the first half of the previous year. On the other hand, interest income already declined on a quarterly basis in 2023 Q2, mainly due to a drop in income vis-à-vis the MNB, in line with the decline in the policy rate since May and the zero interest payment on 2.5 per cent of the reserve base introduced in April. Given the current macroeconomic environment, there are downside risks to profitability in the medium term. Subdued demand for credit and low lending volumes in parallel with the declining interest rate environment may mean that interest income from market lending will not be able to offset the reduction in interest income earned on liquidity deposited with the central bank, and thus profitability is expected to remain below current levels. However, under the rules announced this year, the decline in profitability may be mitigated next year by the fact that banks will be allowed to reduce their extra profit tax expenditure (up to 50 per cent) in line with their increased holdings of government securities in 2024.[32] The factors explaining the rate of growth in interest income at the international and domestic level are discussed in more detail in Box 5.

[30] Approximately two thirds of credit institutions recorded the full 2022 extra profit tax in June 2022.

[31] Only taking into account on-balance sheet items of the central bank vis-à-vis credit institutions.

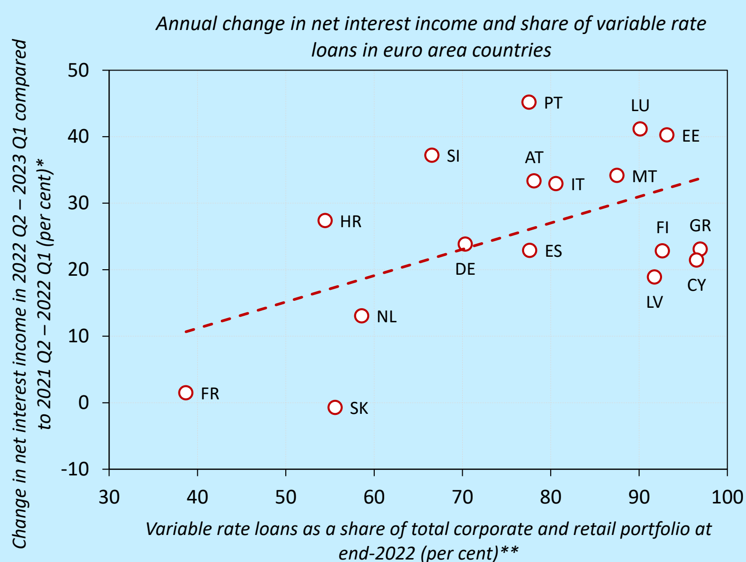
[32] According to the regulation announced on 31 May 2023, if the average daily stock of the government securities of the bank from 1 January to 30 November 2024 increases compared to the average daily stock of the government securities from 1 January to 30 April 2023, 10 per cent of the increase, but up to a maximum of half of the 2024 extra profit tax, may be deducted from the tax rate.

BOX 5: SOURCES OF RISING INTEREST INCOME INTERNATIONALLY AND IN HUNGARY

In parallel with the increases in central bank interest rates during the past two years, the net interest income of banks has increased substantially in a short period of time in many countries, but regarding the size and sources of this increase, there are significant differences across regions. These differences, in addition to interest rate hikes, are mostly explained by the specific characteristics of banking markets, such as the specificities of the balance sheet structure (interest rates, maturity) or the level of development of the derivatives market in a given economy. Generally speaking, banks typically have long-term loans and short liabilities, and they try to reduce the resulting spread (pricing gap) in order to maximise consistency between changes in interest revenue and interest expenses. Possible ways of doing this include, on the asset side, variable-rate and short-term loans, and on the liability side, increasing the proportion of time deposits, which are more responsive to interest rate changes but slower over time, while the use of derivatives, such as interest rate swaps, is an off-balance sheet tool.

In an international comparison, banking markets have different characteristics due to their level of development, which also played a role in the rise in interest income in recent years. According to Caballero et al. (2023),[33] banking systems in advanced and emerging[34] economies have different balance sheet composition and market conditions, which had an impact on the growth of interest income. In emerging economies, net interest income grew at a substantially higher rate, typically accounting for 65 per cent of total income[35] in 2022, while in developed economies the median was 55 per cent (69 per cent in Hungary). This is related to the higher share of corporate loans in emerging regions, which includes a larger share of variable-rate loans, compared to retail portfolios, which typically have longer fixed-rate portfolios. In addition to variable interest rates, shorter loan maturities are also more common in emerging economies. Between 2014 and 2022, the share of loans with a maturity of less than one year ranged from just 20–25 per cent in developed markets, compared with the range of 40–45 per cent in Asia and Latin America and 30–40 per cent in other emerging economies (including the Central and Eastern European region). A significant number of emerging market banks have therefore shifted loans towards short-term and variable rates in order to reduce the maturity mismatch and thus allow the impact of the rising interest rate environment to be more quickly reflected in interest income. In addition, the share of time deposits in emerging economies has historically been higher than in developed markets, and this share is set to rise again after falling in previous years, following the interest rate hikes starting in 2021. In 2022, the median share of time deposits in developed markets was only slightly above 10 per cent, compared with 35 per cent in emerging Asia and 20–30 per cent in other emerging markets. Time deposits play an important role, first, because they have lower risk of early redemption in the event of a financial shock from unexpected deposit outflows and, second, longer time deposits allow banks to reduce the interest rate risk arising from maturity mismatches. The scope for hedging the maturity mismatch in the derivatives market is limited in some emerging

Annual change in net interest income and share of variable rate loans in euro area countries



*Note: *The change in aggregate net interest income for Q2 2022 – Q1 2023 compared to the amount for the same period one year earlier (Q2 2021 – Q1 2022) was examined.**For Finland and Croatia, data for December 2022 were not available, so the January 2023 value was used. The red dashed line captures the linear trend between the two variables. Source: ECB*

[33] Caballero, J. – Maurin, A – Wooldridge, P. – Xia, D. (2023): Interest rate risk management by EME banks. *BIS Quarterly Review*, September 2023, pp. 49–61.

[34] The sample includes 20 advanced and 23 emerging countries.

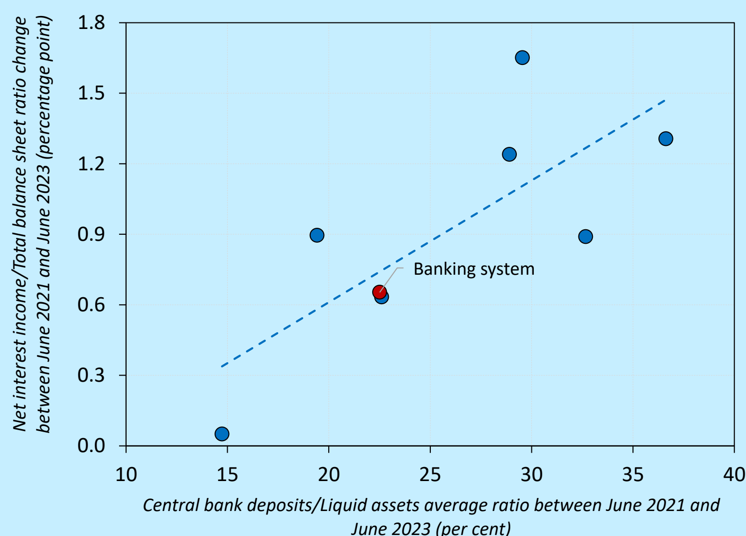
[35] Total net interest and non-interest income, including fees and commissions and the result of financial operations.

markets: while the gross market value of derivatives as a share of assets averaged almost 7 per cent in developed markets, the median value was less than 0.5 per cent in Asia and Latin America and slightly below 1 per cent in other emerging markets (including the Central and Eastern European region).

Looking at the European economies, the share of variable rate loans plays a crucial role in the growth of the net interest margin of banks. According to the ECB's May 2023 Financial Stability Review,[36] interest income from assets, especially variable rate loans, increased significantly in the European market as a result of the interest rate hikes, while on the expenditure side, deposit interest expenditure increased at a more moderate pace. One reason for this is that the proportion of less interest-sensitive demand deposits in both the household and corporate sectors in the euro area has risen significantly since 2008, which has reduced the interest expenditure of banks. Importantly, the rising inflation and the unfavourable macroeconomic environment in 2022 also led to a slowdown in lending, and thus the volume effect was moderate (or in some cases negative) in almost all countries, while the contribution of the margin became crucial for the evolution of bank interest income. Looking at the 17 euro area countries for the four-quarter period starting in 2022 Q2, compared to a year earlier, on average, net interest income growth was higher in those Member States with a higher share of variable-rate loans.

Hungary has experienced exceptionally high net interest income growth by European standards, but this was driven by other country-specific aspects rather than internationally observed factors. Compared to other EU countries and emerging markets, Hungary does not have a high share of variable-rate loans, as these amounted to 39 per cent of the corporate and retail loan portfolio altogether in 2022 and only 35 per cent at the end of 2023 H1. In addition, the interest rate cap measures introduced in 2021 and 2022 limited the pass-through of variable lending rates to bank income, affecting almost 10 per cent of total loans in 2023 H1. In Hungary, profitability in the period from January 2022 to June 2023 was mainly supported by interest income, which rose by 64 per cent, an outstanding growth rate by international standards, but the main contributor to this was the interest income on HUF liquidity deposited with the central bank. In 2022, the year-on-year increase of HUF 675 billion in net interest income was supported by an increase of HUF 779 billion in net interest income from the central bank, and in 2023 H1, the increase of HUF 387 billion in net interest income was supported by an increase of HUF 627 billion in net interest income from the central bank, while in both periods, interest income from the other sectors decreased compared to the previous period. There is considerable heterogeneity in interest income among domestic actors, with one of the main reasons for this being the different structure of liquid assets: based on data from seven large domestic banks and the banking sector as a whole, institutions with a higher share of MNB deposits in their liquid assets showed a significant increase in net interest income as a share of assets.

Comparison of interest income on assets and MNB deposits on liquid assets ratio for seven domestic banks between June 2021 and June 2023



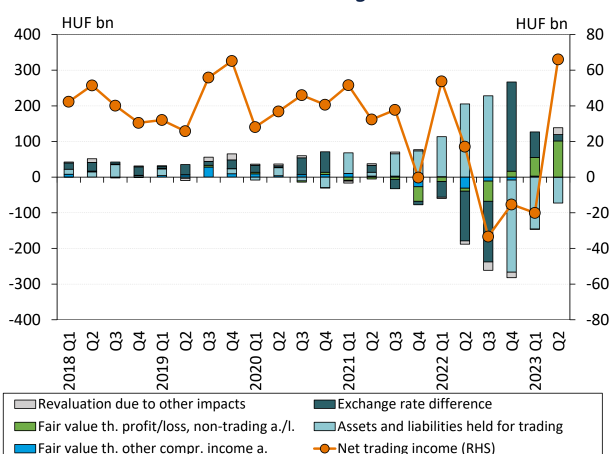
Note: For one institution, a one-off outlier in interest expense on financial derivatives was adjusted in net interest income (for June 2023), as a material change in group accounting policy resulted a significant transfer for a transaction interest portfolio, migrating from trading income to interest expense and distorting the trend basis of interest income. Source: MNB

Overall, the source of rising interest income varied across countries. For most banking systems, the share of variable-rate loans was dominant in this respect. In Hungary, however, the high share of fixed-rate loans and the interest rate cap measures have limited the impact of variable-rate loans on improving bank profitability. For domestic

[36] European Central Bank (2023): Financial Stability Review, May 2023, pp. 58–61.

banks, interest income on instruments held with the central bank was the main driver of the improvement in profitability. In addition, high liquidity in the banking market has led to low competition for deposits, which has resulted in a more subdued increase in deposit rates, further enhancing the profitability of the domestic banking system.

Chart 57: Results and components of financial operations including portfolio revaluation in IFRS accounting



Note: Based on non-consolidated data. Source: MNB

Chart 58: Distribution of credit institutions by net impairment to assets ratio

Note: Total-asset-weighted distribution. Green categories represent net reversal of impairment, while red categories represent net recognition of impairment. Source: MNB

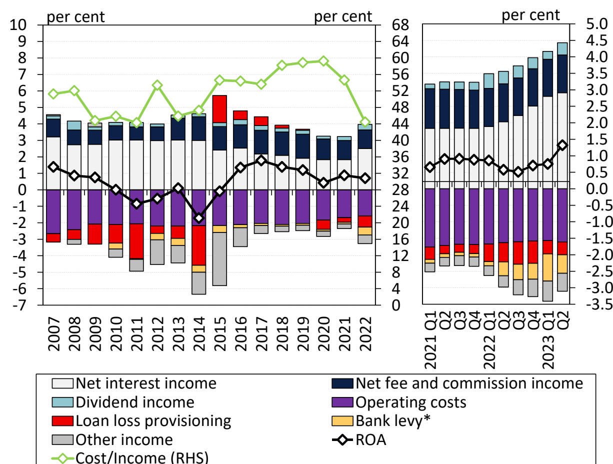
In 2023 H1, the result of financial operations made a positive contribution to the net income of the banking system. The net trading income amounted to HUF 46 billion at the end of June 2023, of which a profit of HUF 66 billion was generated in the second quarter, in addition to the loss in 2023 Q1. The last time a similar surplus was recorded was in 2022 Q1 (Chart 57). The category of revaluation of non-trading transactions at fair value through profit or loss (FVTPL), including mostly prenatal baby support loans[37], contributed positively to the net trading income, increasing by HUF 175 billion in the first half of this year compared to 2022 H1 and thus accounting for 21 per cent of net profit in the first half of 2023. In addition, the net impact of the exchange rate difference increased substantially by HUF 272 billion compared to 2022 H1, also improving the balance. As in the last quarter of 2022, the net change in the value of instruments held for trading once again undermined the net trading income in 2023 H1, as it was some HUF 535 billion lower than in 2022 H1. In 2023 H1, the revaluation of the fair value through other comprehensive income (FVOCI) bond portfolio increased the equity of the banking system by HUF 71 billion.

Net impairment recognition in 2023 H1 was significantly lower than last year. Net impairment charges amounted to HUF 40 billion in 2023 H1, compared to HUF 223 billion in the same period last year, when it was mainly due to the Russian-Ukrainian conflict. After a write-back in Q1, the net impairment provision in Q2 amounted to 0.07 per cent of assets, which is, however, below the average of the quarters of 2020 (Chart 58). Based on the balance sheet total, the ratio of institutions that recognised impairments was 82 per cent, which slightly exceeds the value for 2022 Q4. The uncertain economic environment may result in a deterioration in customers' creditworthiness, and accordingly, looking ahead, impairment may still rise, especially in the corporate segment.

The return on assets also improved significantly in 2023 due to an increase in interest income. The 12-month

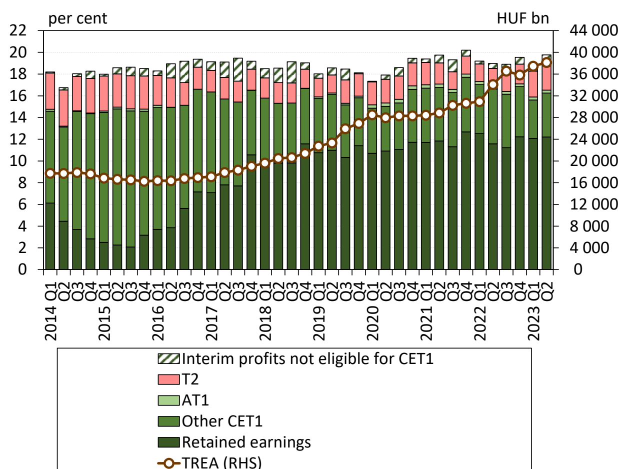
[37] On the fair value of retail loans see more in: Éva Gulyás – Márton Miklós Rátky (2023): Fair Value of Retail Loans: Are We Following IFRS9 or Misinterpreting It? *Financial and Economic Review*, 22 (1), March 2023, pp. 78–104.

Chart 59: Changes in 12-month rolling income components relative to total assets in the credit institutions sector



Note: Based on non-consolidated data. Bank levy* column includes both the "normal" bank levy and extra profit tax. Source: MNB

Chart 60: Consolidated capital adequacy and total risk exposure amount of the banking sector



Source: MNB

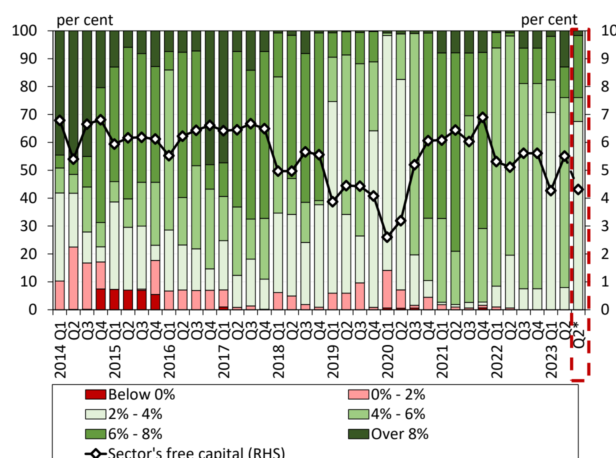
rolling return on assets (ROA) amounted to 0.7 per cent in December 2022, before rising significantly to 1.3 per cent by the end of 2023 H1 (Chart 59). The largest contributor to the substantial increase in the indicator was the rise in net interest income, which improved the indicator by 40 basis points in proportion to assets. By contrast, the 8-basis point increase in the extra profit tax as a share of assets was the main factor behind the reduction in ROA. In previous years, we could observe a material decline in asset and income costs, with the former explained by the impact of balance sheet expansion and the latter by the extreme high interest income. Thus, the 12-month rolling indicator of operating costs as a share of assets was 1.61 per cent and operating costs to income was 41 per cent at the end of 2023 H1. At the same time, operating costs as a share of total loans have risen steadily since 2019, from 6.2 per cent to 8.7 per cent. Overall, it can be said that the cost efficiency ratio of Hungarian banks is still one of the lowest by EU standards.

6.2. With outstanding profitability, a prudent dividend payment policy is necessary

The capital adequacy of the banking sector still reflects strong shock-absorbing capacity. The consolidated capital adequacy ratio (CAR) of the banking system was back to 18.8 per cent at the end of June 2023, similar to the level at end of 2022, after a slight drop in 2022 Q1 (Chart 60). The CET1 ratio stood at 16.3 per cent. For lack of auditing, the profit that cannot yet be included in the profit/loss may potentially improve the value of the CAR by roughly 0.9 percentage point, but in light of banks' dividend payment plans, not all of this profit will strengthen the sector's capital position. In 2023 H1, regulatory capital increased by 5.9 per cent and the total risk exposure amount (TREA) by 6.4 per cent. 90 per cent of the TREA increase was related to credit risk exposure, linked to corporates and exposures secured by liens on real estate. The increase in regulatory capital at the sector level is mostly explained by the rise in the previous years' retained earnings and Tier 2 capital.

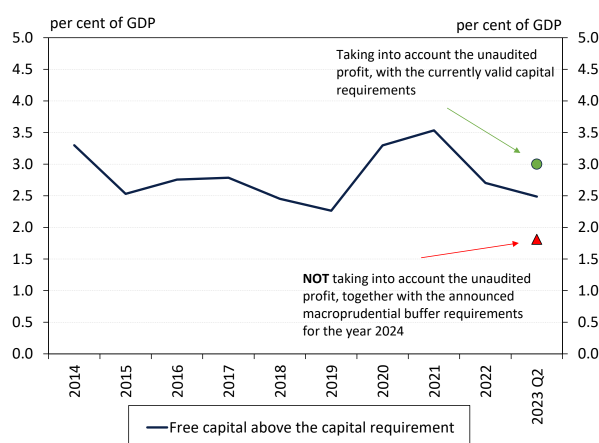
Despite the rising buffer requirements, free capital as a share of TREA declined only moderately over the half-year. In spite of increasing buffer requirements, the free capital of the banking sector excluding the interim profit, on a TREA basis, fell slightly by 40 basis points over the half-year to 4.6 per cent and amounted to HUF 1,744 billion in nominal terms at the end of 2023 Q2. At the end of June, on a TREA basis, 92 per cent of the banking system would have a free buffer of more than 4 per cent on a full unaudited result basis, which is a significant increase from

Chart 61: Distribution of banks by level of free capital over the overall capital requirement



Note: Weighted by TREA. Free capital includes total interim or year-end profits as well. Q2* calculated at the currently known level of the combined capital buffer applicable in 2024. The categories indicate the level of regulatory capital above the overall capital requirement as a ratio of the total risk exposure amount. Source: MNB

Chart 62: Free capital of the banking system in proportion to GDP



Source: MNB

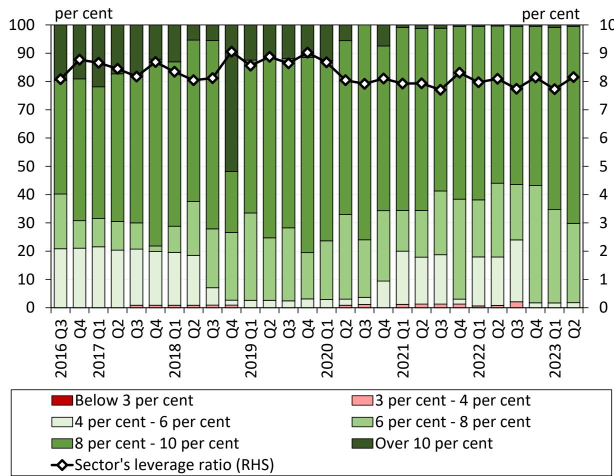
29 per cent at the end of March (Chart 61). The latter low share is explained by the 50-per cent usage (1.25 per cent) capital conservation buffer (CCoB) available until the end of 2022, and by the doubling of the capital buffer for systemically important institutions (O-SII) for the seven institutions concerned. The former reduced the free capital buffer by HUF 468 billion and the latter by HUF 138 billion. The Minimum Requirement for Own Funds and Eligible Liabilities (MREL), which will be fully phased in from 1 January 2024, will impose a significant borrowing requirement on the institutions concerned in 2023.[38] In addition to the latter, banks should also be prepared for the fully reset O-SII in 2024, the activation of the countercyclical capital buffer (CCyB) in July 2024,[39] and the preventive reactivation of the systemic risk capital buffer (SyRB). Assuming O-SII and CCyB levels in 2024, at the end of 2023 H1, 100 per cent of the banking system would still have a free buffer of more than 2 per cent and 32 per cent would still have a free buffer of more than 4 per cent. Looking ahead, developments in the capital position may be worsened by the introduction of additional government measures that could lead to further losses for the banking sector, as well as additional loan loss provisioning, due to a further potential increase in credit risks.

A prudent dividend payment policy is needed to maintain the level of free capital as a share of GDP in the future. The banking system recorded an outstanding profit in the first half of 2023, with a significant contribution from interest income on central bank deposits. In the current declining yield environment, interest income is expected to moderate, highlighting the importance of provisioning in parallel with a potential increase in credit risks. The need to reinvest profits is also underlined by the need for a prudent dividend policy to maintain free capital as a share of GDP, which has been declining since the dividend payout restriction was lifted, also taking into account the increasing buffer requirements in 2024 and the expected decrease of the capital requirement mitigating effect of the state guarantee related to certain loan programs (Chart 62). The latter is also crucial, as the baseline results of the solvency stress test suggest that there is a bank which would breach its capital requirement in 2025, if they maintain their typical dividend payment behaviour. In

[38] From 1 January 2024, the institutions concerned will have to comply fully with the MREL requirements applicable to them. To meet the latter, banks will have to issue an additional HUF 410 billion of MREL-eligible funds after October 2023 until 1 January 2024. For more details on the principles for calculating the MREL requirements and the extent of the necessary adjustment, see the Macroprudential Report 2023.

[39] Given the recent substantial decline in domestic cyclical financial system risks, MNB decided to shift the countercyclical capital buffer by one year.

Chart 63: Distribution of the total exposure amount based on institutions' leverage ratio



Note: Based on the fully phased-in definition of Tier 1 capital. The categories indicate the level of the leverage ratio, i.e. of the ratio of the T1 capital to the total exposure amount used for the calculation of the indicator. For 2020 Q3, numerical data and data on an exposure basis are only available for 75 per cent and 84 per cent of banks, respectively. Source: MNB

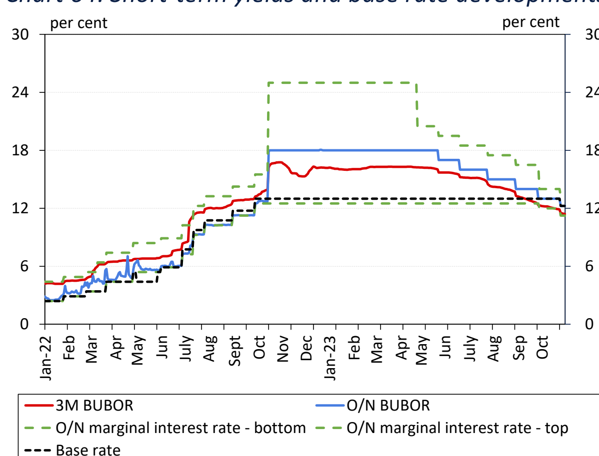
addition, increasing lending activity is key to maintaining future profitability and the real value of the loans outstanding, which also requires higher nominal capital levels in the medium term.

The leverage requirement is met by credit institutions at the sectoral and individual level with an adequate buffer. From June 2021, meeting the 3-per cent leverage requirement also became mandatory for banks. The leverage ratio (LR) of the credit institutions sector remained stagnant at 8.2 per cent on a half-yearly basis at the end of June 2023 (Chart 63). The stability of the indicator was due to a 6-per cent increase in both the total exposure amount (denominator) and the core capital (numerator) over this period. At an individual level, all institutions continued to meet the imposed level of requirements. The ratio, on an exposure basis, exceeded 4 per cent for all credit institutions, and also exceeded the 6 per cent level for 98 per cent of the sector's participants at the end of 2023 H1.

7. Market and bank liquidity: liquidity impact of deposit outflows offset by central bank interest payments

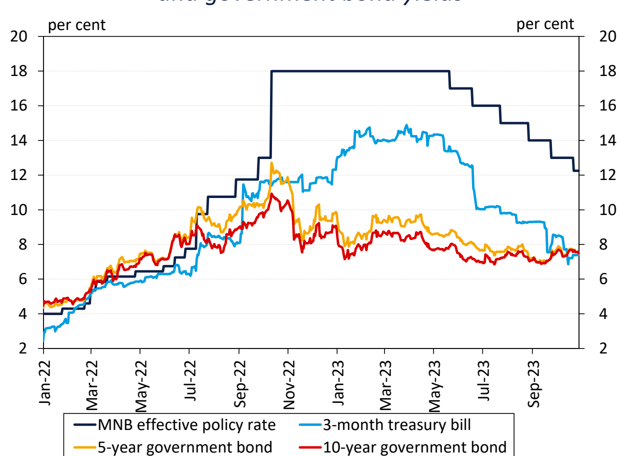
Short yields declined as monetary conditions started to normalise, while long yields fell in line with the stabilisation in overall investment sentiment and with a decrease in inflation expectations. Liquidity levels continue to be shaped mainly by slight decrease in deposits and the liquidity-increasing impact of interest paid on central bank instruments. The liquidity reserve of the banking system remains ample, despite deposit outflows by households and non-bank financial institutions. Despite significant changes in deposits and foreign funding, the banking system continues to operate with a stable, balanced funding structure, both in terms of macroprudential rules and other relevant risk indicators, which, together with ample liquidity, ensures adequate shock resilience and lending capacity.

Chart 64: Short-term yields and base rate developments



Source: Government Debt Management Agency, MNB

Chart 65: Evolution of the MNB's effective interest rate and government bond yields



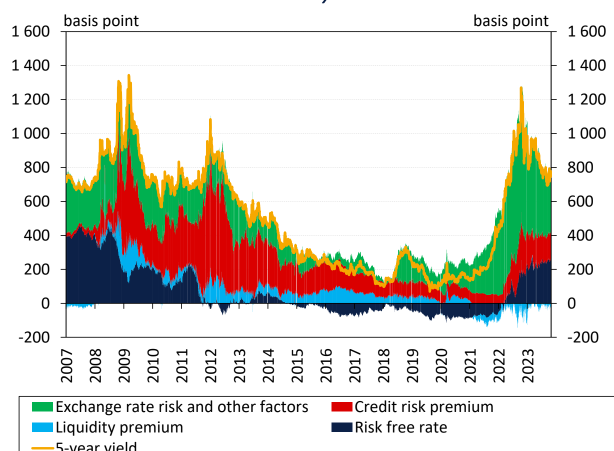
Note: Based on HUF government bond yields. Source: Bloomberg

7.1. Long yields fell during the first half of the year and then short yields also declined

The normalisation in monetary conditions has led to a reduction in short yields. The cautious and gradual phasing out of the overnight deposit quick tender introduced to ensure financial market stability, has led to a general and significant decline in short yields since May 2023. In the interbank unhedged money market, the HUFONIA stood at 12.2 per cent and the 3-month BUBOR at 11.4 per cent at the end of October 2023 (Chart 64). As a result of the steady improvement in risk perception, monetary policy entered a new phase with the convergence of the overnight deposit rate and the base rate, which created the possibility to use a simpler set of instruments adapted to the changed environment.

Long yields have fallen thanks to the MNB's measures, the decrease in inflation expectation and improving investor sentiment. In May 2023, domestic money market developments stabilised on the back of an improved inflation outlook and current account balance, as well as favourable global investor sentiment. As market tensions eased and Hungary's risk perception improved, the MNB started a cautious and prudent easing of interest rate conditions at its May rate-setting meeting, which also led to a decline in interbank and government bond market yields (Chart 65). The MNB started to normalise the interest rate environment by lowering its effective interest rate in May. Subsequently, over the past 5 months, 5-year and 10-year government bond yields fell by around 50 to 140 basis points. The rate of continuous decline was broken by the rise in developed market yields that started in September, but despite this, domestic long-term government bond yields fell to nearly 7.2 and 7.3 per cent

Chart 66: Breakdown of the 5-year forint government bond yield



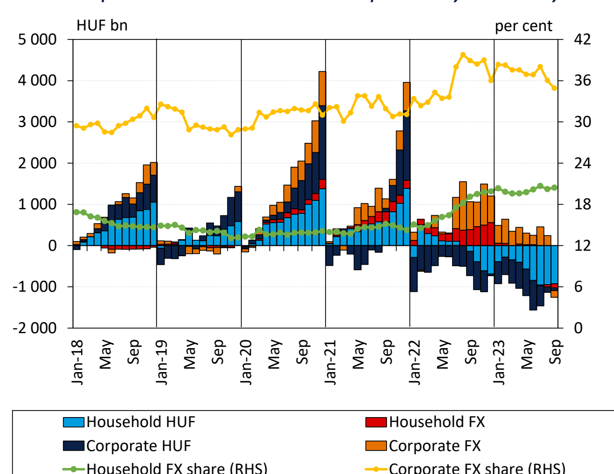
Source: Refinitiv, MNB

by November 2023. In addition, the Hungarian premium versus German and Polish 10-year yields also decreased, falling by 100 and 25 basis points, respectively. The favourable trends observed in long-term yields persisted for a significant part of the past half-year despite the downgrading of the US debt rating, the slowdown in the Chinese economy and other unfavourable news. This trend was interrupted by the "higher-for-longer" narrative of the advanced central banks in September, after a permanently high interest rate path became more firmly embedded in market expectations.

The decline in Hungarian long yields was mainly due to a reduction in exchange rate and inflation risk. Risk-free yields continued to rise on the back of interest rate hikes by developed central banks and remained at higher levels compared to the past few years, while the Hungarian credit risk premium stagnated over the past six months (Chart 66). By contrast, the decline of nearly 400 basis points in the component capturing exchange rate risk and other risks, including inflation risk, has led to a decline in the 5-year government bond yield of almost 500 basis points since the October 2022 peaks. The extraordinary measures taken by the MNB in October 2022 that managed to stabilise the Hungarian financial market and decrease inflation expectations played a crucial role in this.

7.2. Banking system liquidity remains ample, despite deposit outflows

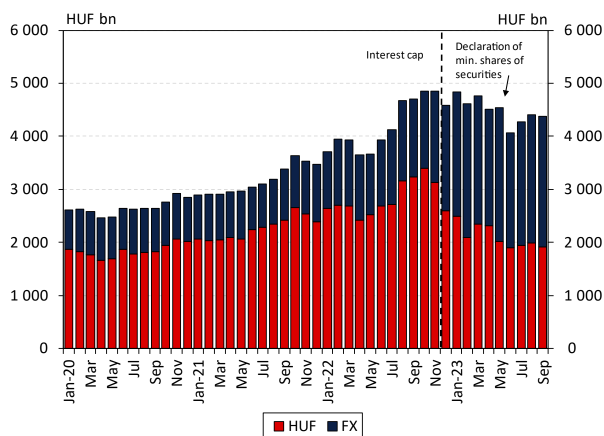
Chart 67: Cumulative annual transaction growth of corporate and household deposits by currency



Source: MNB

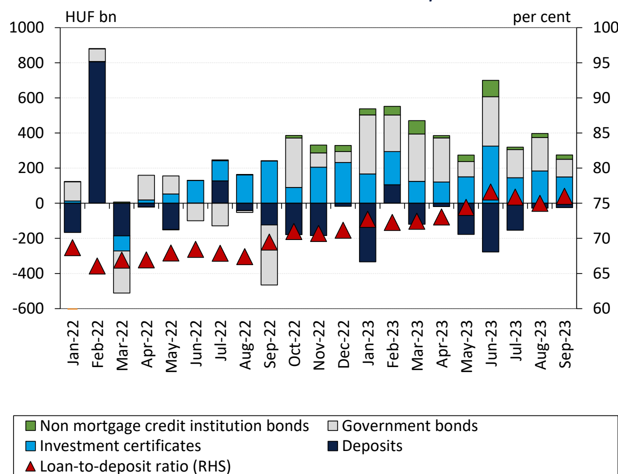
The stock of HUF deposits of households and corporates has been gradually declining since the beginning of 2022. Since January 2022, the stock of household HUF deposits has decreased by HUF 1,618 billion, while that of corporates has fallen by HUF 106 billion on a transaction basis (Chart 67), with the former representing 15 per cent of the stock at the start of the period. For both the household and the corporate sector, the stock of foreign currency deposits increased in line with the outflow of HUF deposits, but since the beginning of 2023, as the HUF exchange rate stabilised, the ratio of FX deposits has been declining for corporates and stagnating for households. The maturity structure of household deposits remains stable, with the share of demand deposits remaining close to 80 per cent at the end of September 2023. This is partly due to slow repricing, with the average stock interest rate on fixed deposits at 4.2 per cent in September 2023. By contrast, there has been a substantial change in the maturity structure of corporate deposits, with the share of demand deposits falling to 64 per cent by September 2023

Chart 68: Deposits of non-bank financial institutions in the banking system by currency



Source: MNB

Chart 69: Evolution of household domestic bank deposits, investment certificate and government bond transactions and the loan-to-deposit ratio



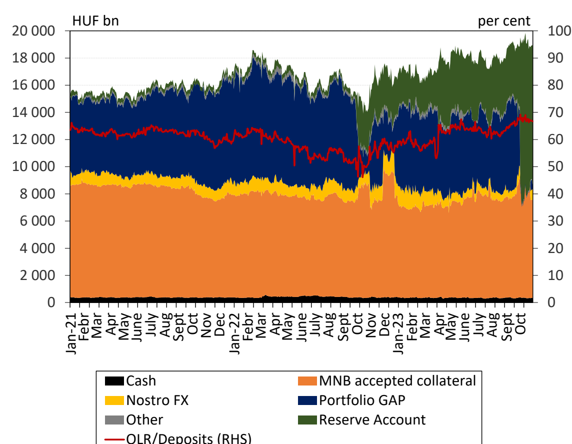
Source: MNB

from 71 per cent at the beginning of the year.

Deposits of non-bank financial institutions decreased as a result of government measures. Following the entry into force of the interest rate cap regulation in November 2022, deposits of non-bank financial institutions in the banking system decreased by HUF 484 billion until September 2023 (Chart 68). The outflow of deposits was also supported by the government decree announced at the end of April 2023, which required bond, equity and mixed funds to have a minimum 60 per cent weighting of securities in their portfolios from 1 July 2023, which shifted part of the deposits of non-bank financial institutions into foreign and Hungarian government securities. After June 2023, in parallel with the shift of household savings into investment shares and the end of the adjustment process due to government measures, the deposit base of non-bank financial institutions in the banking system resumed its growth, increasing by HUF 311 billion by the end of September 2023. Deposits held by non-bank financial institutions in banks accounted for almost 11 per cent of total deposits at the end of the period under review.

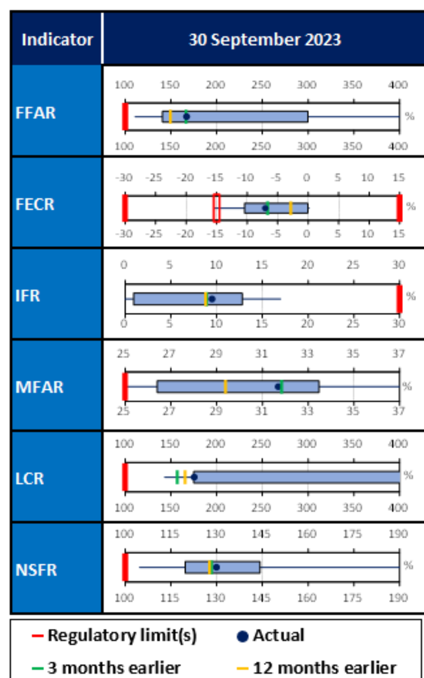
The loan-to-deposit ratio has increased, and the change in the composition of household savings is key to its future development. Private sector deposits at credit institutions have declined, while loans have continued to grow, but at a slower pace, so that the bank loan-to-deposit ratio has risen over the past two years (Chart 69). The process also accelerated somewhat in the first three quarters of 2023, with the ratio rising by about 4.8 percentage points to 76 per cent, but the level can still not be considered high. One key factor for the evolution of the loan-to-deposit ratio is the reallocation of household savings: until 2023 September, household deposits decreased by around HUF 1,000 billion, while household investment units, government securities and other bonds increased altogether by HUF 3,800 billion. This suggests that the migration towards higher-yielding financial products in the household sector continued at a subdued pace. Demand for government securities from household savings and hence the flow of household bank deposits into government securities has been stimulated by several government measures: first, the government's interest rate cap regulation on fixed deposits, which was extended for the third time until 31 December 2023, and second, the social contribution tax on interest income on deposits, payable from 1 July 2023. The Government has also required credit institutions to send an educational information letter to natural persons with deposits in 2023 Q4, in which they must also draw the attention of

Chart 70: Decomposition of banks' operative liquidity reserves



Note: The portfolio gap denotes the contractual net flows of treasury operations within 30 days from the date of data reporting with the following content: interbank loans and deposits, MNB deposits, repos, securities other than own issued, deposits over HUF 5 billion, derivatives. Classified into the "other" category: ECB eligible collateral, cash flows from own securities. The reserve requirement is taken into account by the central bank as a liquid asset. From 1 October 2023, the MNB will pay the base rate on the balance of the reserve account in excess of the required reserve (excess reserves), therefore this instrument will take over the role of the policy instrument. Source: MNB

Chart 71: Compliance of the banking sector with liquidity and financing requirements



Note: FFAR - Foreign exchange Funding Adequacy Ratio, FECR - Foreign Exchange Coverage Ratio, IFR - Interbank Funding Ratio, MFAR - Mortgage Funding Adequacy Ratio, LCR - Liquidity Coverage Ratio, NSFR – Net Stable Funding Ratio. The edges of the blue rectangle denote the lower and upper quartiles of the distribution, while the ends of the dark blue line show the 10th and 90th per centiles of the distribution. For LCR, excluding mortgage banks and home savings funds, based on solo data. For NSFR, including mortgage banks and home savings funds, based on solo data. Source: MNB

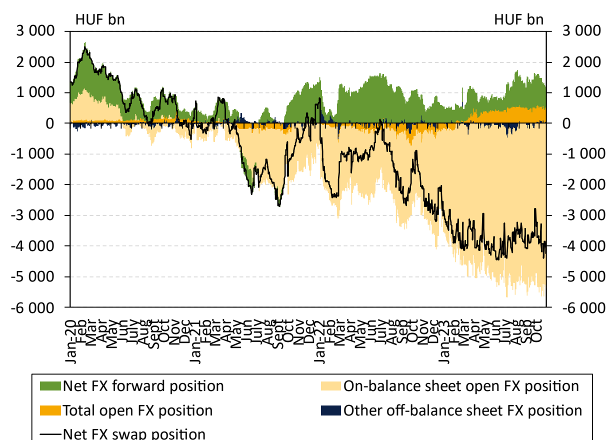
depositors to the difference in the yields available on government securities and deposits.

The liquidity reserve of the banking system remains high, despite deposit outflows. The banking system's operational liquidity reserve (OLR) is substantial, amounting to an average of HUF 19,100 billion in October 2023, which corresponds to 67 per cent of the private sector's deposit holdings (Chart 70). The level of the operational liquidity reserve was stagnating until August 2023, as the impact of deposit outflows was offset by the liquidity-providing effect of interest paid on central bank instruments. Starting from September 2023, the liquidity reserves show an expanding trend, with this increase mainly caused by the reduction of deposit outflows and the MREL bond issues at the end of the period. As of October 2023, the overnight deposit tender was phased out, and its role was taken over by the reserve account that pays interest at the current base rate, according to which the structure of the OLR was also transformed. Following the decision of the Monetary Council in September 2023, the base rate once again became the effective central bank rate. Since October 1, the reserve account is the main tool for sterilising the liquidity of the banking system, which is available to the banks without restriction, with the central bank paying the base rate on the interest-bearing part of the account. Liquid assets held by the banking system at the central bank increased by around HUF 900 billion between April and September 2023, averaging HUF 13,600 billion in September 2023.

7.3. Low-risk funding structure with the expectation of maintaining buffers above regulatory requirements

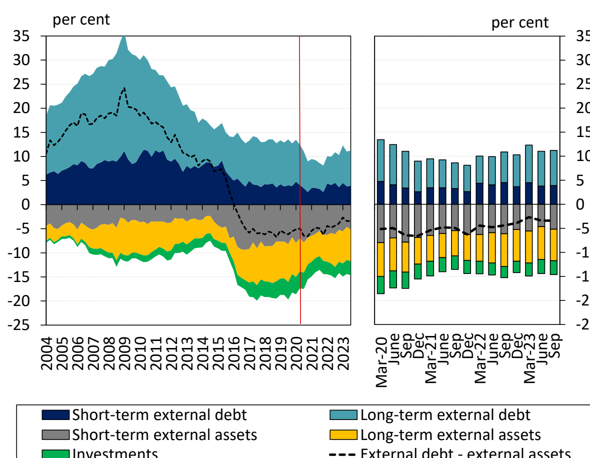
The liquidity and funding position of the banking system is stable, and the level and structure of funding is adequate. Following the shift in its level in October of last year in relation to the MNB's toolkit restructuring and the adjustment to this, the structure of sectoral liquidity coverage ratio (LCR) has changed, but the banking system is characterised by high buffers and ample liquidity with an improving LCR surplus at high, stable levels. In response to rising interest rate risks and international bankruptcy events, the MNB has also tightened the Pillar 2 deposit concentration surplus requirement and bank liquidity management requirements in its supervisory powers, in order to further strengthen the regulatory framework for the LCR to ensure the availability of ample liquidity (see Box 6 for more details).[40] The EU-wide net stable funding

Chart 72: Changes in the banking sector's FX swap position and in other components of the total FX position



Note: Banking sector, excluding data from EXIM, MFB and KELER. Net FX swap position = (On-balance sheet open FX position - Total open FX position) + Net FX forward position + Other off-balance sheet FX position. Source: MNB

Chart 73: External assets and liabilities of the banking system in proportion to total assets



Note: Credit institutions sector, together with data from EXIM, MFB and KELER. According to original maturity. Source: MNB

ratio (NSFR) target of 100 per cent, which requires banks to have stable funding over the long term, is basically being met by banks at a stable sector average of around 130 per cent (Chart 71). The banking system's on-balance sheet foreign exchange surplus is slowly increasing, but the sectoral average of the foreign exchange coverage ratio (FECR) is still well within the allowed regulatory limits and far from the risky lower limit of -30 per cent. In the past period, the improvement in the average level of the foreign exchange funding adequacy ratio (FFAR) for the banking sector has clearly been driven by an increase in foreign currency funding beyond one year. Sector-wide reliance on financial corporate funding, which is considered riskier, and the interbank funding ratio (IBR), which limits it, remained low in 2023 H1 and was well below the regulatory maximum. The mortgage funding adequacy ratio (MFAR) requirement is met by the banking sector with a substantial, growing buffer, aided by the MNB's regulatory changes to help market participants meet their significant funding renewal obligations in adverse market conditions.[41]

The increase in the foreign exchange surplus on the balance sheet continued at a slowing pace. The growth dynamics of foreign currency assets have accelerated with the expansion of corporate foreign currency lending, but remain below the growth in foreign currency deposits, which continues to open up the banking system's on-balance sheet foreign currency position (Chart 72). The expansion of foreign currency savings in the banking system was supported by the rising foreign currency deposits of corporates, households and non-bank financial institutions. The banking sector covers the on-balance-sheet open position with off-balance-sheet FX sales (forint purchases) on the FX swap market. Nevertheless, the growing swap market exposure leads to an increase in market, counterparty and liquidity risks related to the derivative transactions, although according to October 2023 data, the banking sector's gross swaps to obtain forints accounted for only 13 per cent of the banking sector's balance sheet total on average, which is still not excessive.

The trend of increasing foreign liabilities in the banking system, which represent a financial risk, has come to a halt. The ratio of foreign liabilities to total assets fell from 12.3 per cent in March 2023 to 11.2 per cent in September

[40] Management circular on the expectation of liquidity buffers for credit institutions, 1 August 2023.

[41] For details, see the MNB's Macroprudential Report 2023.

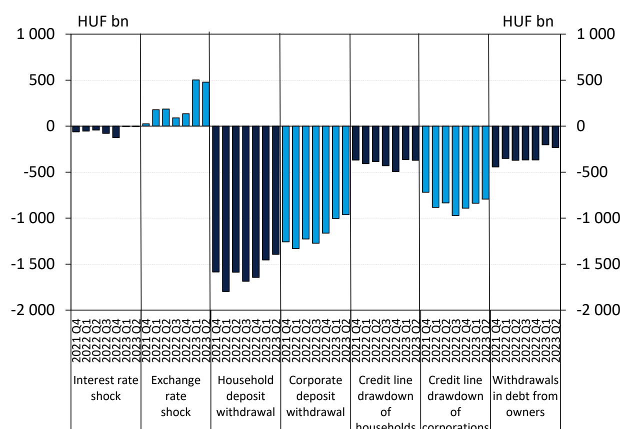
Table 3: Main parameters of the liquidity stress test

Assets		
Item	**Degree**	**Currencies affected**
Exchange rate shock on derivatives	15 per cent	FX
Interest rate shock on interest rate sensitive items	300 basis points	HUF
Calls in household lines of credit	20 per cent	HUF/FX
Calls in corporate lines of credit	30 per cent	HUF/FX

Liabilities		
Item	**Degree**	**Currencies affected**
Withdrawals in household deposits	10 per cent	HUF/FX
Withdrawals in corporate deposits	15 per cent	HUF/FX
Withdrawals in debt from owners	30 per cent	HUF/FX

Source: MNB

Chart 74: Aggregate impact of stress components at the system level



Note: The columns show the change (in HUF billion) in the LCR's liquid assets at the banking sector level as a result of a given shock, adjusted for the change in net outflows. For calculating the impact of each shock, we applied the assumption that the given shock occurs individually. Therefore, the sum of the impacts of the shocks does not necessarily reflect the combined impact of the shocks. Source: MNB

2023 (Chart 73), driven by a decrease of HUF 859 billion in total external debt. Half of the decline in total external debt is the result of a reduction in short-term external debt, which as a share of total balance sheet assets fell from 4.5 per cent to 3.9 per cent between March and September 2023. The normalisation of monetary conditions and the high foreign ownership of the MNB's regularly announced discount bonds play a significant role in the reduction of the foreign liabilities of the banking system.

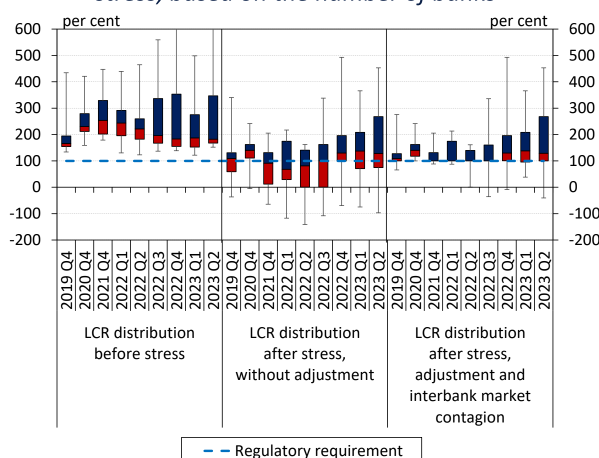
7.4. Liquidity surplus of the banking system provides coverage even in a severe stress scenario

The sensitivity of bank LCR ratios to the liquidity shocks assumed in the stress test did not change significantly in 2023 H1.[42] Of the shocks (Table 3), the relative weight of the potential impact of deposit withdrawals remains the most significant factor. In the hypothetical stress scenario used in our stress testing exercise, we assume a deposit withdrawal of close to HUF 3,000 billion for 2023 Q1 and Q2 for corporate and household sector deposits combined. The credit line drawdown shocks assumed in the scenario totalled HUF 1,300 billion in each quarter (Chart 74). The liquidity impact of the interest rate shock in the stress test and the role of the shock caused by the withdrawal of owners' funds continue to have a relatively modest impact compared to the other items, but the liquidity-enhancing value of the exchange rate depreciation on derivative holdings of banks increased significantly in 2023 H1 in the context of the rising foreign exchange exposure of the banking system.

Based on the liquidity stress test, even in the event of a severe shock scenario, the sector would meet the regulatory requirements. The gradual, steady decline in the median LCR ratio of banks stopped in 2023 H1. Due to the high level of liquid assets in the numerator of the LCR indicator, banks' need to adjust is marginal even in the stress scenario (Chart 75). The vast majority of banks would meet regulatory requirements without significant adjustment even in the event of hypothetical shocks, with less than one tenth of the sector in terms of total assets having to adjust based on the liquidity situation in 2023

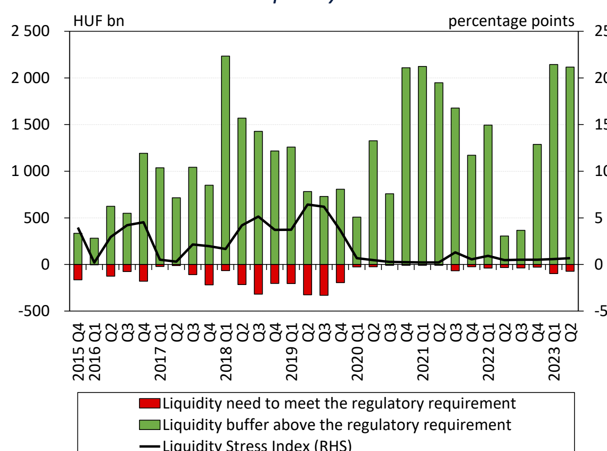
[42] The liquidity stress test examines the impact of a hypothetical, simultaneous occurrence of financial market turmoil, an exchange rate shock, deposit withdrawals, credit line drawdowns and withdrawal of owners' funds with possible interbank contagion effects. For a detailed description of the methodology, see Box 9 of the MNB's May 2016 Financial Stability Report. With regard to the spring 2020 changes to the monetary policy framework, in our calculations, we still take into account the measures that remain effective and relevant during our liquidity stress test, thus including the eligibility of the free stock of large corporation loans and bonds after reduction with an adequate haircut as liquid assets.

Chart 75: Distribution of the LCR before and after stress, based on the number of banks



Note: Boxplot of the distribution between the 10th and 90th percentiles. Source: MNB

Chart 76: Liquidity Stress Index



Note: The indicator is the sum of the liquidity shortfalls in percentage points (but maximum 100 percentage points) compared to the 100-per cent regulatory limit of the LCR, weighted by the balance sheet total in the stress scenario. The higher the value of the indicator, the greater the liquidity risk. Based on data for the nine largest institutions up to 2018 Q1 and for the whole credit institutions sector thereafter. Source: MNB

Q2. In our estimation, taking into account the ability of banks to adapt, which assumes extensive use of central bank liquidity facilities, only two small institutions would face problems with compliance even in a severe liquidity stress.

The Liquidity Stress Index[43] still implies a low level of risk. The sector-wide liquidity surplus is back to high levels after a temporary decline, and the liquidity needs of banks facing a shortage due to stress would be small. The liquidity surplus of banks above the LCR requirement in 2023 H1 was above HUF 5,000 billion at the outset, while the liquidity surplus estimated in the stress scenario is above HUF 2,000 billion aggregated after shocks and bank adjustments. The liquidity needs of banks facing liquidity shortages in the stress scenario would be less than HUF 100 billion in both quarters (Chart 76). The Liquidity Stress Index thus remains close to its theoretical minimum and still implies a low level of risk.

BOX 6: MANAGEMENT CIRCULAR ON THE EXPECTATION OF LIQUIDITY BUFFERS FOR CREDIT INSTITUTIONS

The example of the US bank failures (Silicon Valley Bank, First Republic Bank) underlines the central role of deposits in bank funding and liquidity management, which is also a key issue in bank risk management and stress testing. The deposit outflows experienced by US banks in a banking model traditionally based on deposit taking would lead to liquidity and solvency problems in a short period of time. In the case of the above mentioned banks, the rapid outflow of deposits was also driven by the specific business model and the relaxed supervisory requirements.[44] In the case of

[43] The Liquidity Stress Index, which was prepared to capture the heterogeneity across institutions, aggregates (weighting by the size of bank) the liquidity shortfalls compared to the regulatory limit calculated at the level of the individual banks' stress scenario, expressed in percentage points. This allows us to draw conclusions with regard to the extent of a potential stress situation within the banking sector.

[44] The main factors that led to the failure of Silicon Valley Bank and the acquisition of Credit Suisse are discussed in detail in Box 1 of the May 2023 Financial Stability Report.

Hungarian banks, liquidity risks are different due to the higher diversification of depositors and the liquidity buffers that provide adequate coverage. In the EU, liquidity coverage requirements are uniform for all banks. To calculate the liquidity coverage ratio (LCR) expected of banks, a wide range of outflow factors (5–100 per cent) is applied to the bank deposit base, which attempts to determine the probability of outflow of a given type of deposit in a stress situation by taking into account different aspects. These aspects include, among other things, the additional risks due to the collateralisation, size, concentration, activity and financial awareness of the holders of the deposits.

The MNB has responded proactively and preventively to the increase in Hungarian and international systemic risks to liquidity management by tightening the Pillar 2 deposit concentration surplus requirement and bank liquidity management requirements in its supervisory powers. In response to high liquidity risks in the light of US bankruptcy events in 2023, increased financial market volatility, uncertain economic outlook and potential suction effects on bank deposits, the MNB decided to strengthen liquidity requirements. With the amendment of the so-called Pillar 2 LCR surplus requirement in June 2023,[45] but affecting the September LCR figures, it now expects the surplus requirements for deposit concentration to be applied to large deposits exceeding 1 per cent of the deposits, instead of the 2.5 per cent that was in place after 2019. For the part of large deposits above the limit, the expectation is for a higher outflow weight of 100 per cent than originally. In addition, in a management circular, the MNB drew the attention of institutions to the need to review the liquidity management of banks by 30 September 2023 and to strengthen it by the end of 2023.[46] Below the so-called intervention level of 140 per cent of the LCR ratio, the MNB expects institutions to be able to calculate the ratio on a daily basis and to have the tools and funding to ensure that they can quickly manage risks that arise. The MNB expects that the lowest recovery level for the LCR indicator will be set at a level above the 100-per cent statutory limit, and should it fall below 120 per cent, the MNB will pay special attention to the feasibility of the action plan set out in the recovery plan. Accordingly, the management circular expects appropriate intervention and recovery levels to be defined depending on the level of the LCR, and further development of risk identification and stress testing systems adapted to the bank's size, models adopted and operations. Banks were required to achieve an average LCR improvement of around 4 to 8 percentage points to maintain LCR levels due to the Pillar 2 expectations prior to the tightening. However, in addition to regulatory compliance, it is important that banks have advanced risk management processes in place that can identify liquidity and financial risks that may not be covered by regulatory requirements.

Supervisory requirements for liquidity management strengthen the resilience of the banking system to shocks without limiting lending capacity. Banks create account-based money in their lending activities, i.e. they do not tie up their own liquid assets when disbursing loans. As a result, sectoral lending potential is higher than the average of individual institutional values, but at the institutional level, without an increase in deposits, credit expansion requires alternative funding. Systemic liquidity and deposit savings are not evenly distributed across banks, which further reinforces the importance of maturity transformation in banks, i.e. asset-liability matching and continuous monitoring of liquidity and financial risks, as illustrated by the example of the US bank failures. The outflow of domestic household deposits in recent months does not pose a threat to the stability of the banking system in light of the current liquidity buffers and regulatory efforts, but it does require particular attention from banks. Slow interest rate transmission from the deposit side to households improves bank profitability in the short run and also liquidity conditions in the case of prudent dividend payouts, but increases the chances of further deposit outflows in the long run.

[45] ICAAP-ILAAP-BMA Handbook, June 2023.

[46] Management circular on the expectation of liquidity buffers for credit institutions, 1 August 2023.

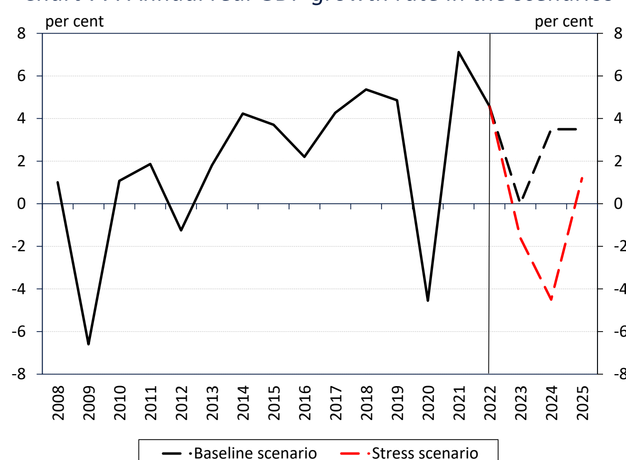
8. Solvency stress tests: increased risks, with high shock resilience

The current highly uncertain macroeconomic environment poses a number of adverse growth risks to the operating environment of the domestic banking sector. In addition to the protracted Russian-Ukrainian war, further escalation in geopolitical tensions, a sustained rise in energy prices, emerging market's capital outflows resulting from a persistently higher interest rate environment in developed markets, and the associated higher volatility in financial markets form the basis of the stress scenario under which the resilience of the domestic banking system to shocks is examined. In this scenario, the Hungarian economy faces much less favourable growth prospects in the coming years than in the baseline, which is further aggravated by a higher inflation environment and a markedly worse labour market climate.

These international macroeconomic uncertainties and the tight monetary policy conditions due to high inflation are the main drivers of the solvency stress test results. In the stress scenario, there is a substantial excess need for loan loss provisioning, in which we have continued to incorporate the risk of vulnerability that could arise if the interest rate cap is lifted, in addition to macroeconomic risk sensitivity. Other income components are strongly affected by repricing of interest-bearing assets over the two-year horizon in both scenarios, resulting in a deterioration in the ability of banks to accumulate capital of around 40 per cent relative to the baseline. Overall, by the end of the two-year horizon of the stress scenario, there would be only a negligible capital shortage at the sector level. In addition, the level of buffers of banks with excess capital will remain broadly adequate despite a substantial reduction thereof, so that the lending capacity of the banking system would not be impaired in the event of a severe stress event.

8.1. The previously identified risks surrounding the operations of banks have eased, but substantial losses may still materialise

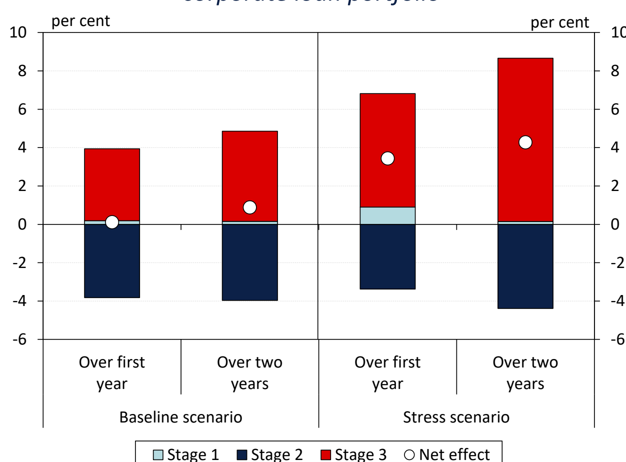
Chart 77: Annual real GDP growth rate in the scenarios



Source: MNB

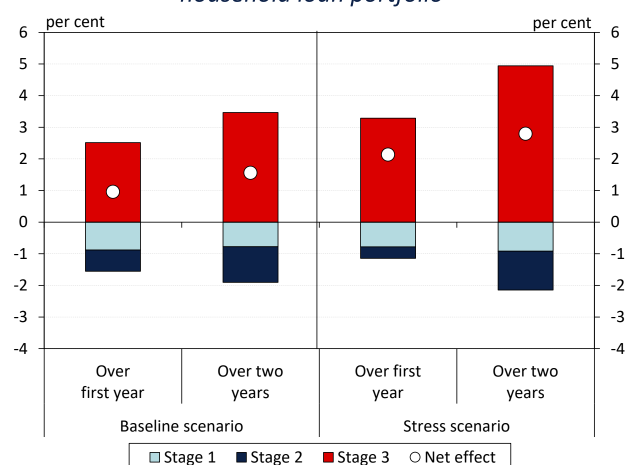
The risk narrative of the stress test is driven primarily by the slowing global economy and the uncertainty in international financial markets. The results of our calculations in the baseline scenario are based on the development of the midpoint of the forecast range from the September 2023 Inflation Report of the MNB (Chart 77). In the stress scenario, the key elements of the international macroeconomic environment are rising geopolitical tensions, alongside the protracted Russian-Ukrainian war, and increased capital outflows from emerging countries, resulting in higher financial market and capital market volatility. In addition, trade tensions and potentially higher protective tariffs due to increasing de-globalisation in the world economy contribute to global demand frictions, while rising energy prices lead to a sustained increase in costs. Consequently, the adverse international economic environment also reduces export growth, one of the main drivers of the Hungarian economy, through a decline in external demand. As a result, domestic firms are forced to postpone investments and start downsizing, leading to a significant increase in the rate of unemployment. Owing to the unfavourable real economic environment, wage dynamics decelerate and disposable income falls.

Chart 78: Cumulative loan loss provision rate for the corporate loan portfolio



Note: Net generated loan loss provisions in proportion to the gross carrying amount of the corporate loan portfolio, grouped by end-of-period stages. Source: MNB

Chart 79: Cumulative loan loss provision rate for the household loan portfolio



Note: Net generated loan loss provisions in proportion to the gross carrying amount of the household loan portfolio, grouped by end-of-period stages. Source: MNB

Furthermore, in this environment, the saving rate of households increases, as they form larger precautionary reserves, and reduce their consumption to a greater extent. Thus, in the stress scenario, domestic GDP growth is substantially lower than in the baseline, with cumulative GDP growth over two years falling by about 10 per cent and household consumption more than 12 per cent below the stress test baseline, while employment falls by 175,000. This is accompanied by a substantial weakening of the exchange rate and in accordance with this, by tighter interest rate conditions in the stress scenario compared to the baseline.

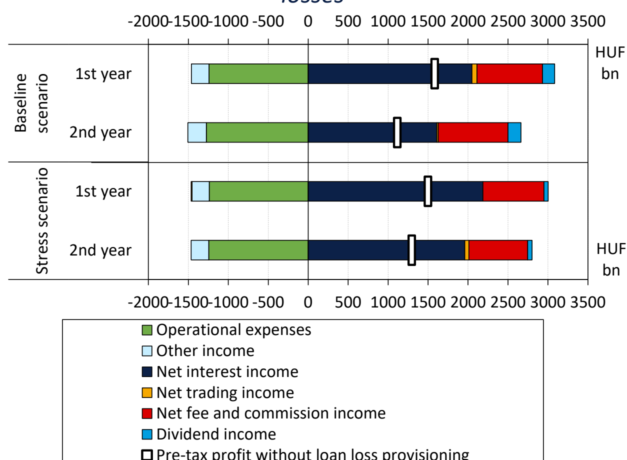
Even as the forward-looking risks in bank portfolios are reduced, there is still a significant excess of loan loss provisions in the stress scenario. In addition to the development of the macro environment, other factors also affect the risks of bank portfolios. Compared to our last report, the factors driving the reduction in expected losses include a higher quality of bank portfolios[47] compared to the end of 2022 and lower credit dynamics expected over the horizon of the stress test. From our previously applied specific risk assumptions, the increased energy price vulnerability of corporate customers has been removed as the energy market normalised,[48] while in the household segment, as the interest rate environment has moderated, the range of vulnerable households affected by the interest rate cap narrowed.[49] On the whole, total additional loan loss provisioning in the stress scenario reaches around 4 per cent of the aggregate gross book value in the case of the corporate portfolio (Chart 78) and less than 3 per cent in the case of the household portfolio (Chart 79).

[47] On the one hand, the base volume is lower, and on the other, the average Stage rating as a percentage of exposure is more favourable than at the end of 2022.

[48] For details of the conditions previously applied, see Chapter 9.1 of the November 2022 MNB Financial Stability Report.

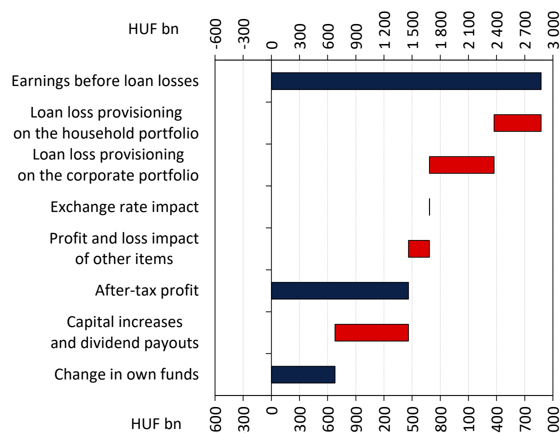
[49] Under IFRS 9, we considered a significant increase in the repayment burden after the expiry of the programme as a significant increase in credit risk (SICR).

Chart 80: Developments in earnings items before loan losses



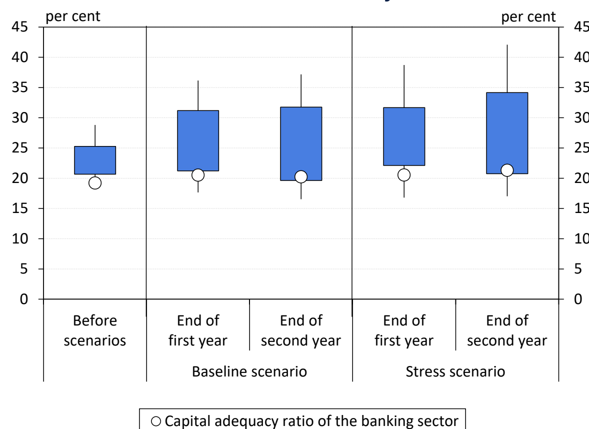
Source: MNB

Chart 81: Changes in certain profit and loss items and own funds of the banking sector in stress scenario



Note: Cumulative values over the two-year scenario. The profit or loss impact of other items consists of the following elements: NDIF, IPF and Resolution Fund fees, bank levy, extra profit tax, capital needs of foreign subsidiaries and banking groups' tax expense. The level of dividend payments is also influenced by the profit and capital adequacy as well.
Source: MNB

Chart 82: Distribution of the capital adequacy ratio based on the number of banks



Note: Vertical line: 10–90 per cent range; rectangle: 25–75 per cent range. The sector-level average is the value weighted by the total risk exposure.
Source: MNB

8.2. No significant capital shortage would occur at the sector level in the event of severe stress

The stress scenario used slightly increases the sector-level profit calculated before credit risk losses. We presumed a significant reduction in the historically high net interest income on the baseline, even assuming a one-step removal of the interest rate cap in June 2024 (Chart 80). The decline is mainly explained by the fall in yields. Higher, but also declining interest rates throughout the stress scenario result in net interest income for 2023 H2 that is broadly equal to the observed level in the first half of the year, and cumulatively over the full two-year period, almost in HUF 500 billion more than in the baseline. The bulk of the difference is related to interest income on central bank assets and a smaller part to interest income on securities. The net interest income on household and corporate loans is almost identical in the two scenarios, due to the fact that the revenue-increasing effect of higher interest rates in the stress scenario is offset by the increase in non-performing loans and the revenue decline due to lower loan growth compared to the baseline. Higher net interest income in the stress scenario is offset by lower dividend income realised by banks and lower net fee and commission income due to reduced real economic activity. Operating costs are broadly the same between the two scenarios, as the cost-increasing effect of rising inflation in the stress path is offset by the cost reduction from smaller balance sheet expansion.

A significantly lower capital accumulation can be achieved in the stress scenario. In the stress scenario, loan loss provisioning, as well as other items which include corporate income tax, the regular bank levy and the extra profit tax, reduce the sector's profit by around one half over the two-year horizon. The total after-tax profit over two years in the stress scenario would thus amount to nearly HUF 1,500 billion, i.e. banks would lose almost one third of their profits compared to the baseline. Shocks prevail at the beginning of the horizon, and initial losses are only partially recovered by slowly improving income components. Thus, the sector suffers more significant losses in the first year of the stress scenario compared to the baseline, and the total capital accumulation is almost 40 per cent lower over the two-year horizon of the stress scenario (Chart 81).

At the sector level, only a small capital shortage would arise in the case of a severe stress event, and thus the lending capacity of the banking system would not be affected. The sectoral capital adequacy ratio of 19 per cent

Table 4: Stress test results at various capital requirements

	8-per cent capital requirement		Overall capital requirement*	
	Baseline scenario 2025 Q2	Stress scenario 2025 Q2	Baseline scenario 2025 Q2	Stress scenario 2025 Q2
Capital need of banks (HUF bn)	0.0	0.0	0.0	3.1
Average capital need of banks** (percentage points)	0.0	0.0	0.0	3.9
Capital buffer of banks above requirement (HUF bn)	3 604	3 484	1 417	1 537
Average capital buffer of banks** (percentage points)	12.2	13.3	4.8	5.9

Note: *Capital requirements projected for the given quarter. ** TREA-weighted averages. Source: MNB

in June 2023, including the full interim result, would increase to above 20 per cent in both the baseline and the stress scenario by the end of the two-year horizon of the stress test. The improvement in sectoral capital adequacy in the stress scenario compared to the baseline is mainly driven by dynamic balance sheet assumptions of more subdued credit dynamics and decline in the total risk exposure (TREA) (Chart 82). Additionally, due to the dynamic development of profitability and capital adequacy, the dividend payments of certain institutions are also different in the two scenarios, so that the reinvested earnings to meet the overall capital requirement (OCR) is higher at the sector level in the stress scenario. Overall, there is no capital shortage for any institution in the two-year horizon of the baseline scenario, and only a marginal sectoral capital shortage of HUF 3 billion arises by the end of the second year under the stress scenario. Moreover, the level of sectoral buffers remains sufficient even in the stress scenario, despite the substantial reduction (Table 4).

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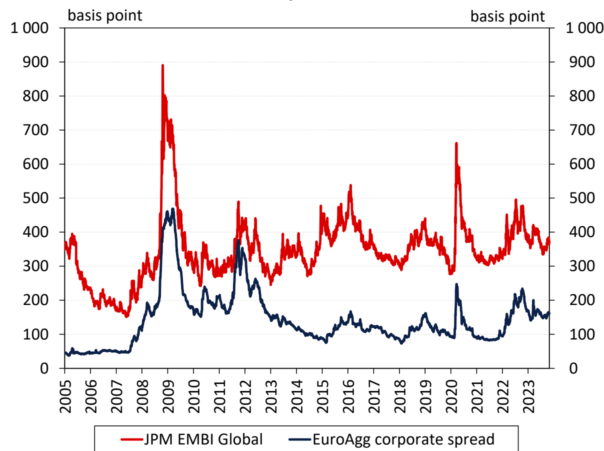
APPENDIX: MACROPRUDENTIAL INDICATORS

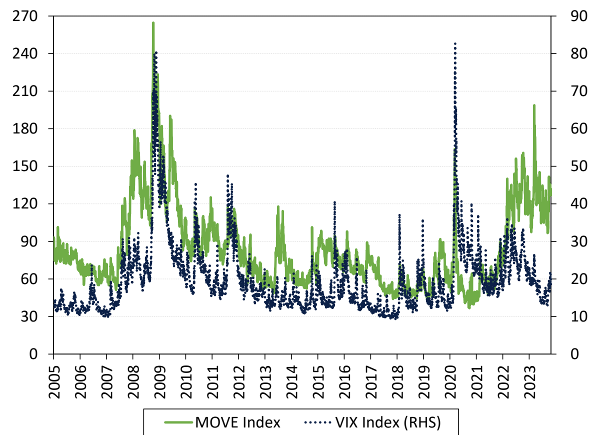
1. Risk appetite

Chart 1: Primary risk indicators



Source: Bloomberg

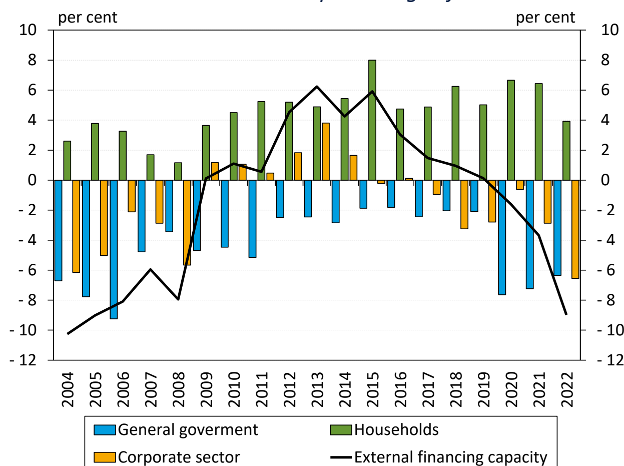
Chart 2: Implied volatility of the primary markets



Source: Bloomberg

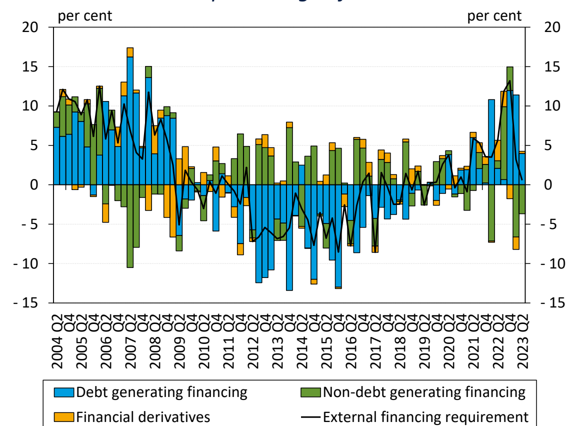
2. External balance and vulnerability

Chart 3: Net financing capacity of the main sectors and external balance as percentage of GDP



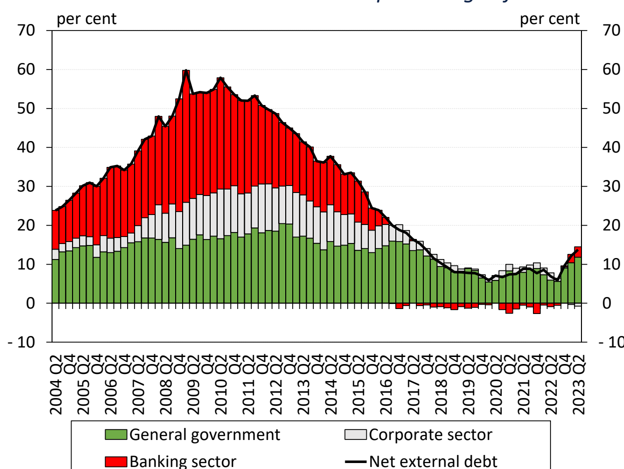
Source: MNB

Chart 4: External financing requirement and its financing as a percentage of GDP



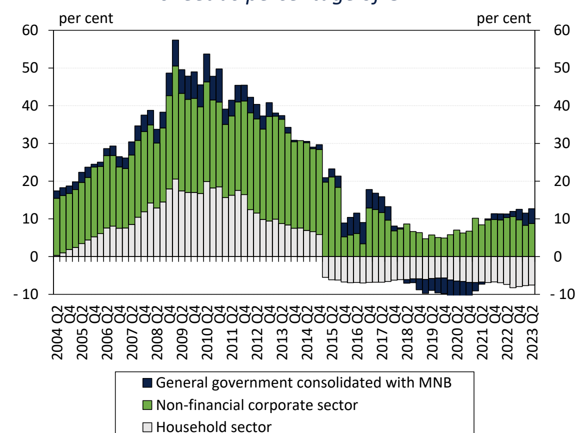
Source: MNB

Chart 5: Net external debt as a percentage of GDP



Source: MNB

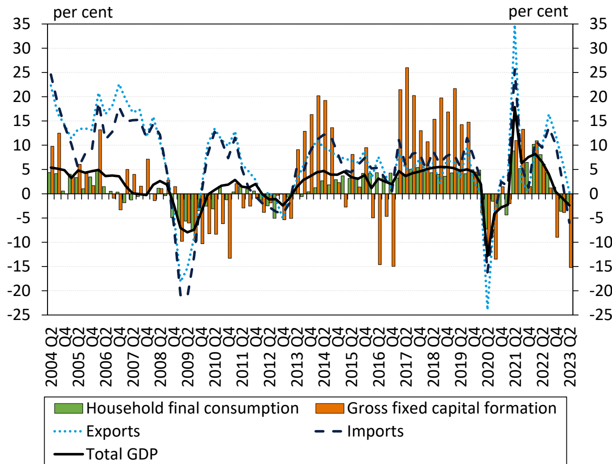
Chart 6: Open FX position of the main sectors in the balance sheet as percentage of GDP



Source: MNB

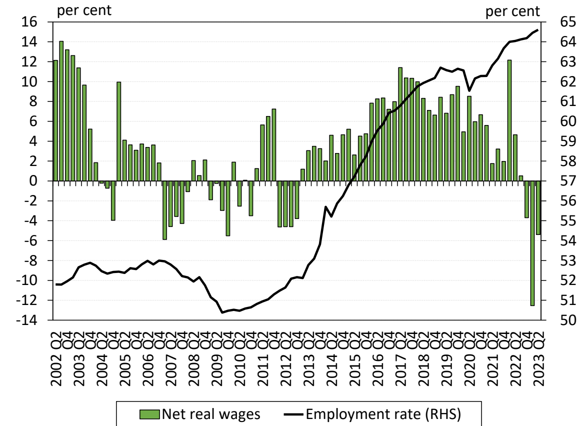
3. Macroeconomic performance

Chart 7: GDP growth and its main components (annual growth rate)



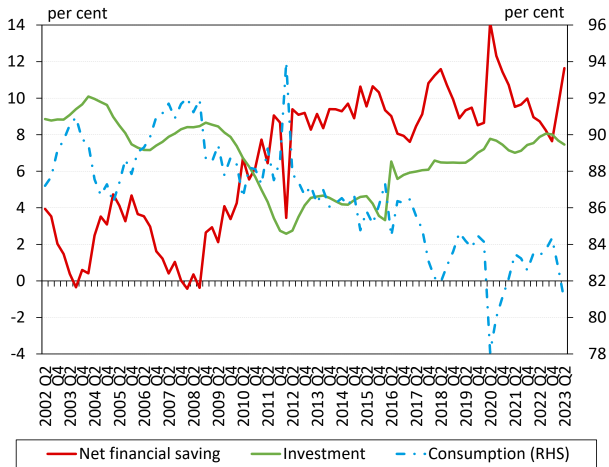
Source: HCSO

Chart 8: Employment rate and net real wage developments (annual growth rate)



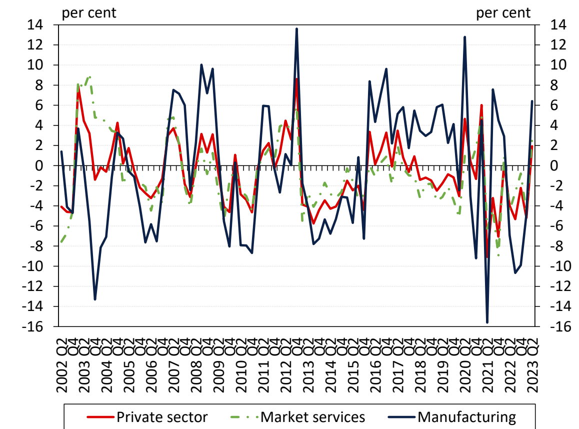
Source: HCSO

Chart 9: Use of household income as a ratio of disposable income



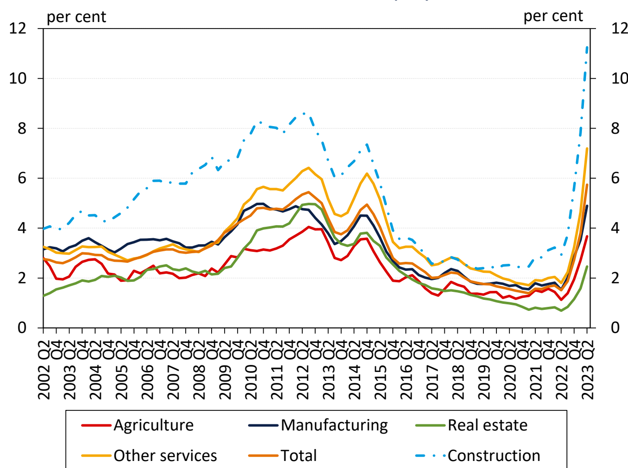
Source: HCSO, MNB

Chart 10: Corporate real unit labour cost in the private sector (annual growth rate)



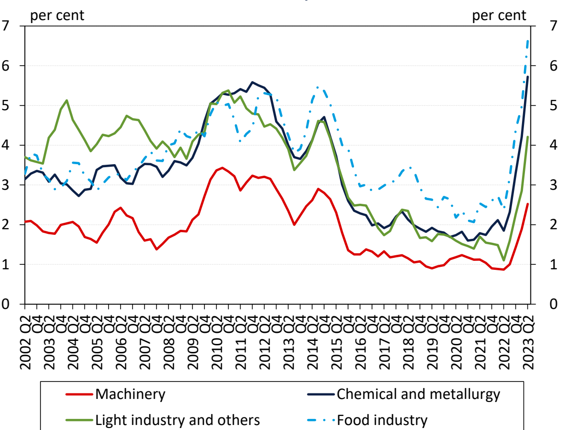
Source: HCSO, MNB

Chart 11: Sectoral bankruptcy rates



Source: Opten, MNB, HCSO

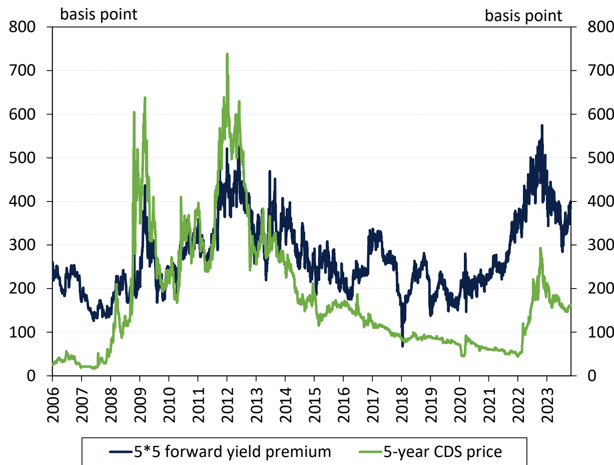
Chart 12: Bankruptcy rates for the subsets of manufacturing industry



Source: Opten, MNB, HCSO

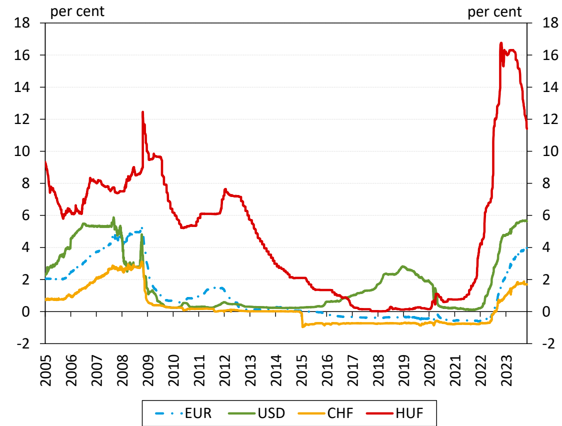
4. Monetary and financial conditions

Chart 13: Long-term sovereign default risk and forward premium of Hungary



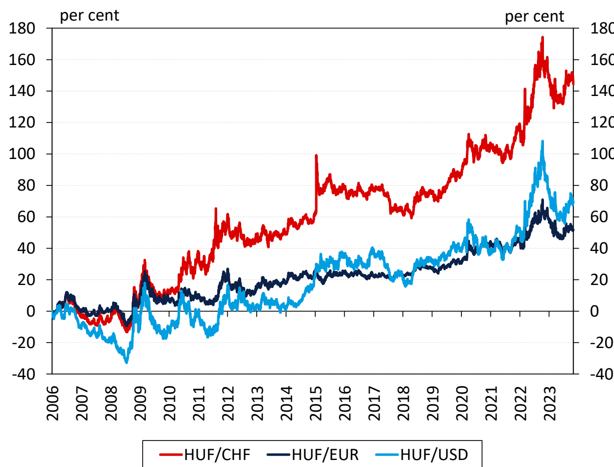
Source: Reuters, Bloomberg

Chart 14: Three-month EUR, USD, CHF and HUF money market interest rates (LIBOR and BUBOR fixing)



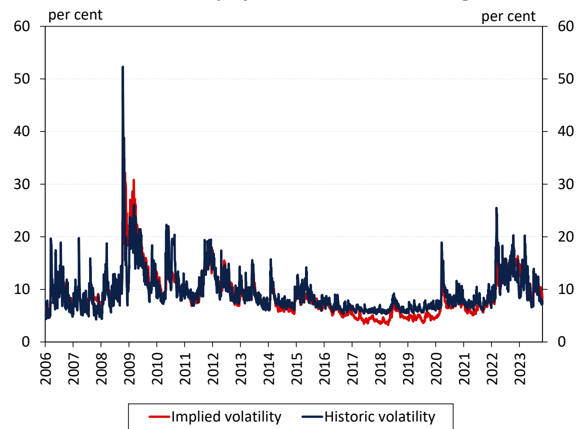
Source: Bloomberg

Chart 15: HUF/EUR, HUF/USD and HUF/CHF exchange rates changes compared to 2 January 2006



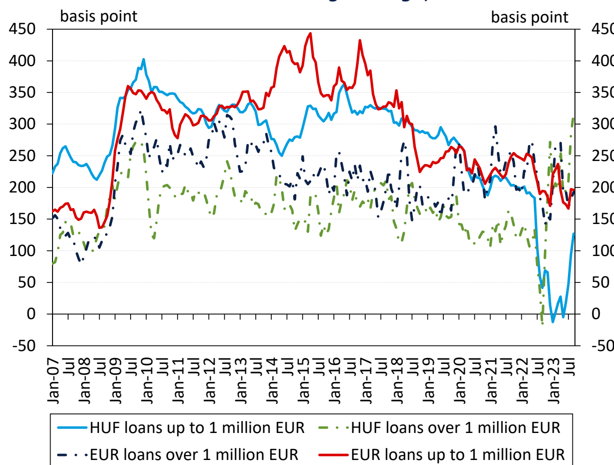
Source: Reuters

Chart 16: Volatility of the HUF/EUR exchange rate



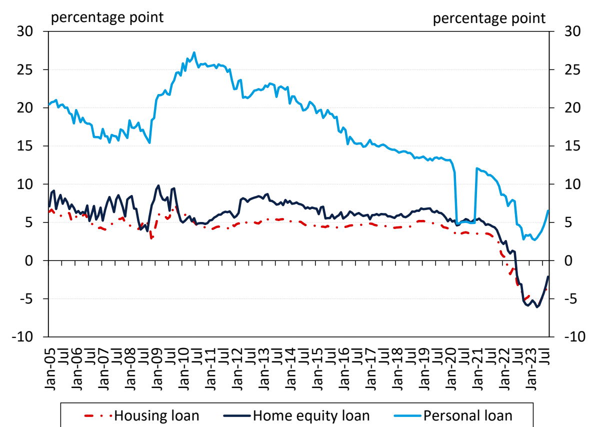
Source: Bloomberg, MNB

Chart 17: Interest rate premium of new loans to non-financial enterprises (over 3-month BUBOR and EURIBOR, respectively, 3-month moving average)



Source: MNB

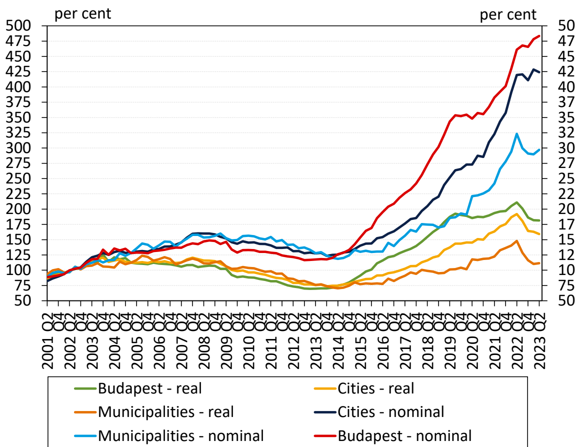
Chart 18: Interest rate premium of new HUF loans to households (over 3-month BUBOR)



Source: MNB

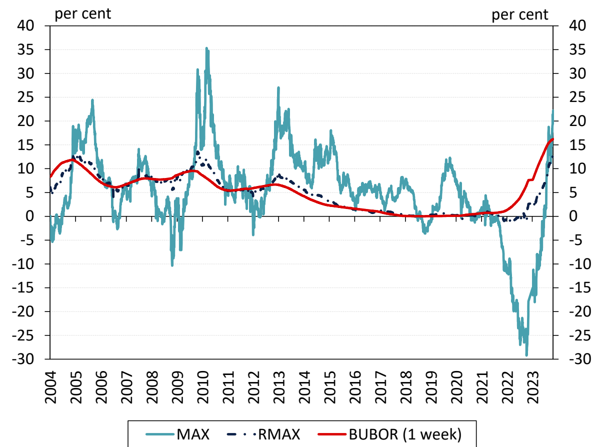
5. Asset prices

Chart 19: MNB house price index breakdown by settlement type



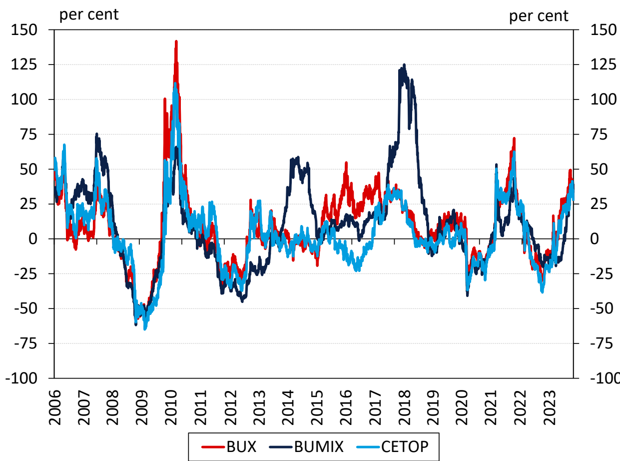
Source: MNB

Chart 20: Annualised yields on government security indices and money markets



Source: Government Debt Management Agency, MNB

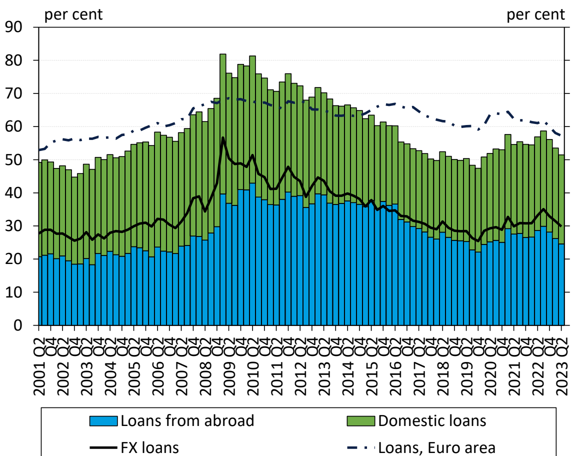
Chart 21: Annual yield of key Hungarian and Central and Eastern European stock market indices



Source: BSE

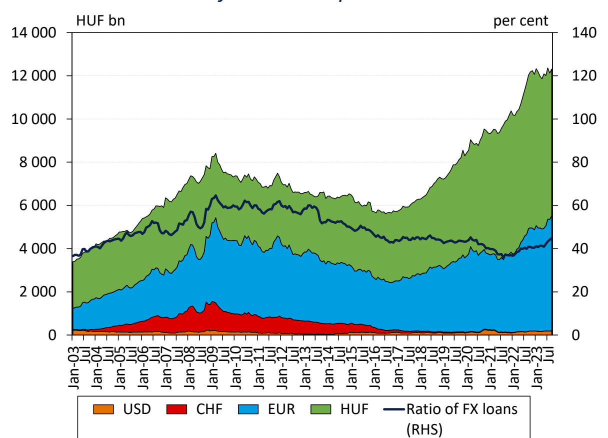
6. Risks of the financial intermediary system

Chart 22: Indebtedness of non-financial corporations as percentage of GDP



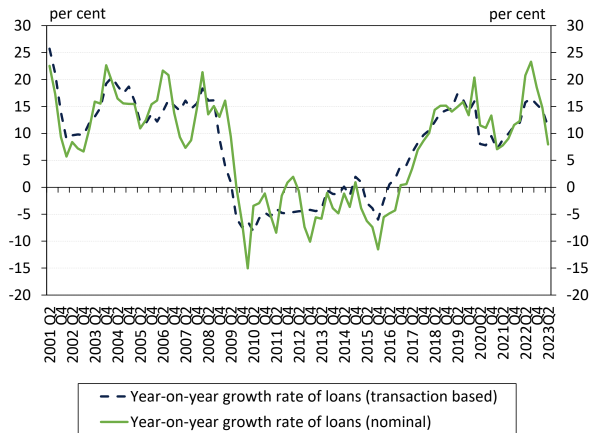
Source: MNB, ECB, Eurostat

Chart 23: Denomination structure of domestic bank loans of non-financial corporations



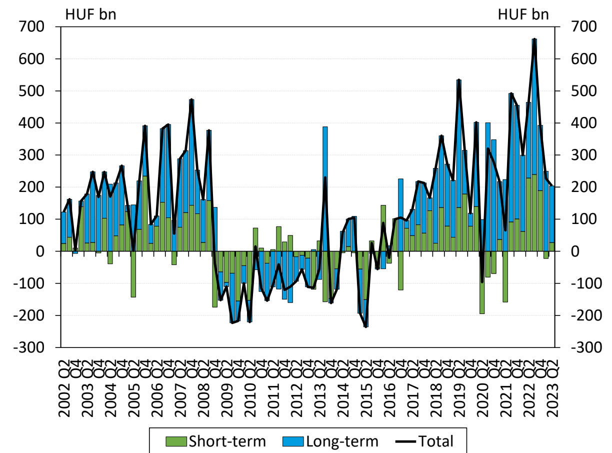
Source: MNB

Chart 24: Annual growth rate of loans provided to non-financial corporations by the financial intermediation system



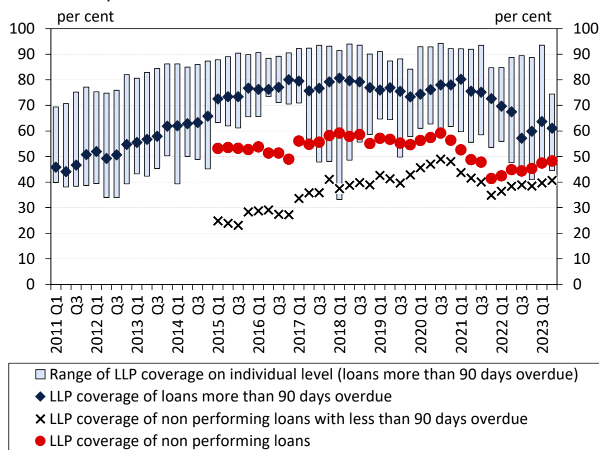
Source: MNB

Chart 25: Lending transactions to the non-financial corporate sector broken down by maturity



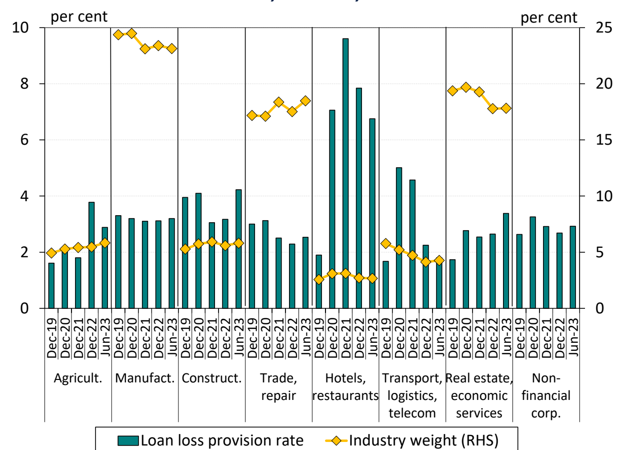
Source: MNB

Chart 26: Loan loss coverage ratio for non-performing corporate loans in the credit institutions sector



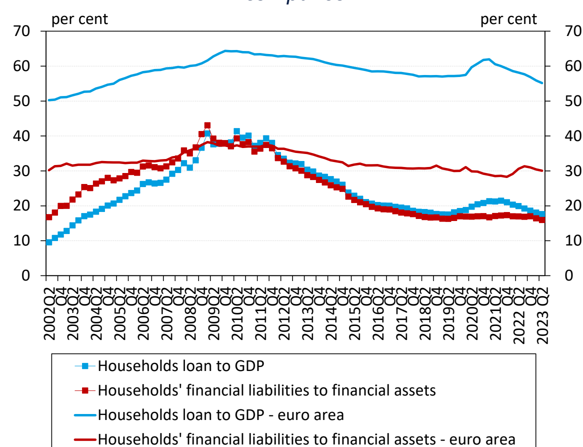
Source: MNB

Chart 27: Provisioning on loans of non-financial corporations by industry



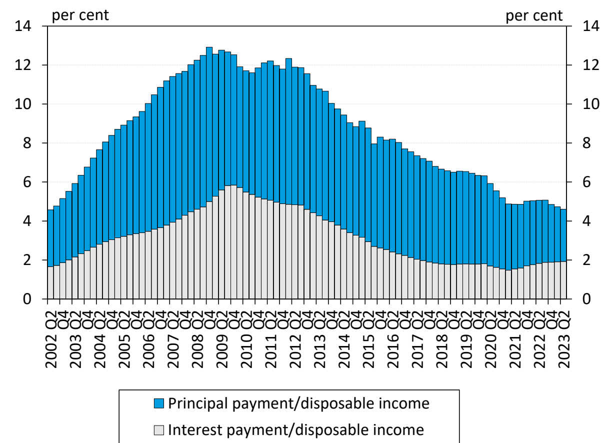
Source: MNB

Chart 28: Indebtedness of households in international comparison



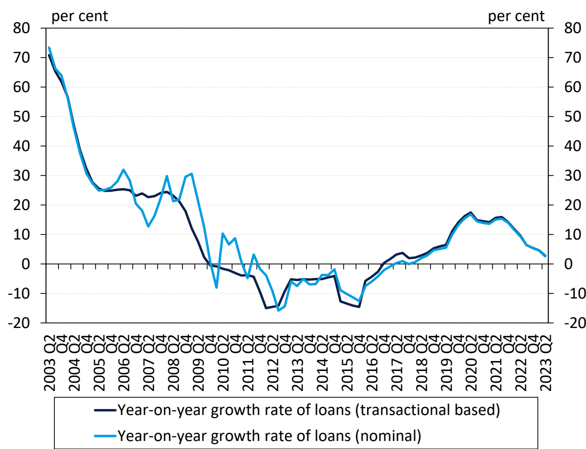
Source: MNB, ECB

Chart 29: Debt service burden of the household sector



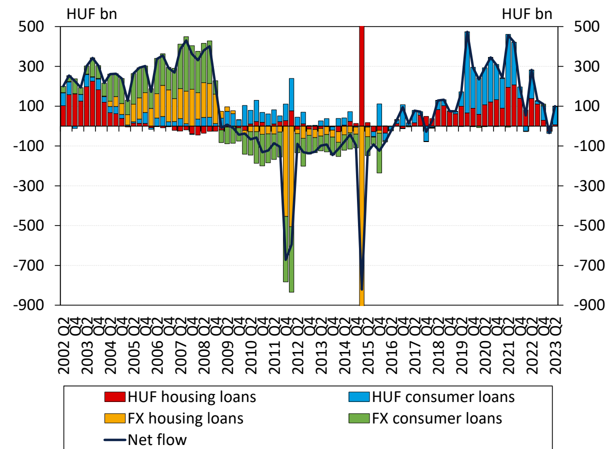
Source: MNB

Chart 30: Annual growth rate of total domestic household loans



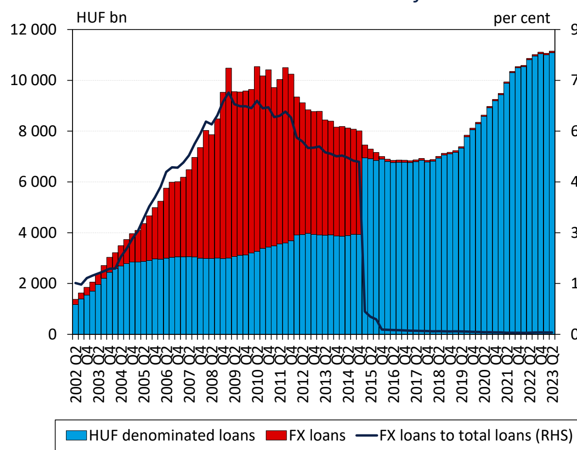
Source: MNB

Chart 31: Transactions of household loans broken down by credit purpose and denomination



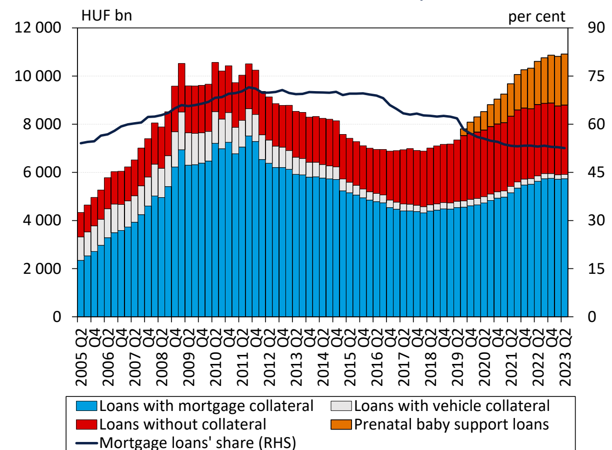
Source: MNB

Chart 32: The denomination structure of household loans



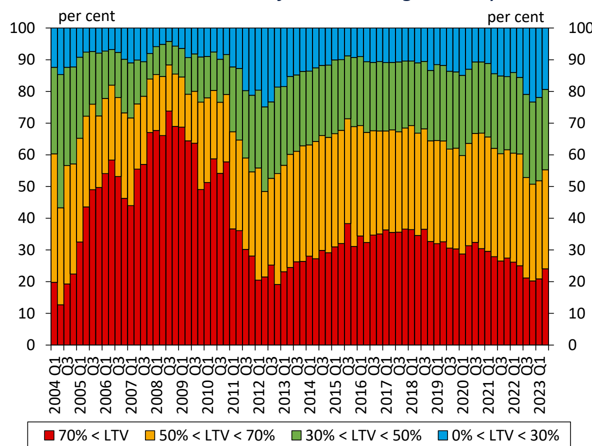
Source: MNB

Chart 33: Household loans distribution by collateralisation



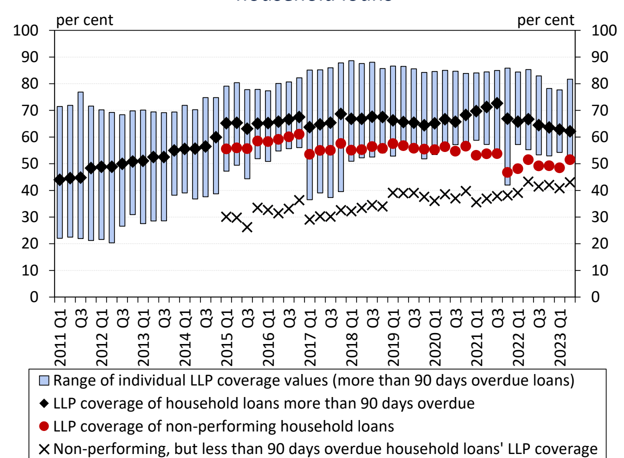
Source: MNB

Chart 34: Distribution of new housing loans by LTV



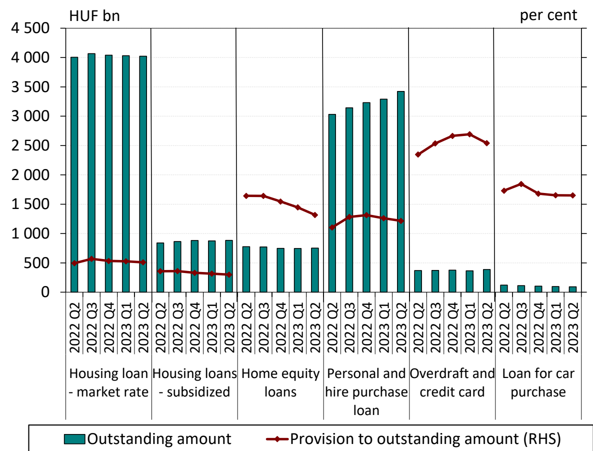
Source: MNB

Chart 35: Loan loss coverage ratio of non-performing household loans



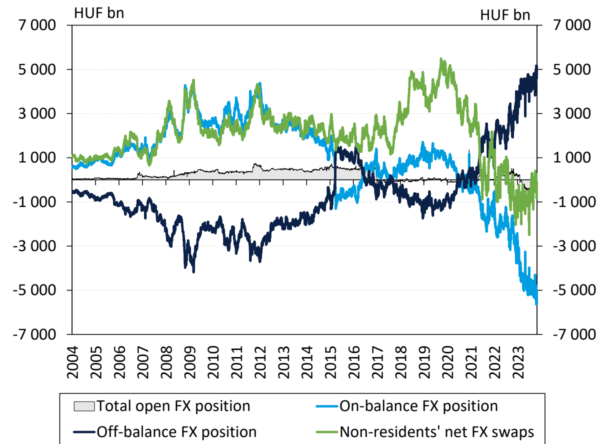
Source: MNB

Chart 36: Provisioning on household loans of financial institutions



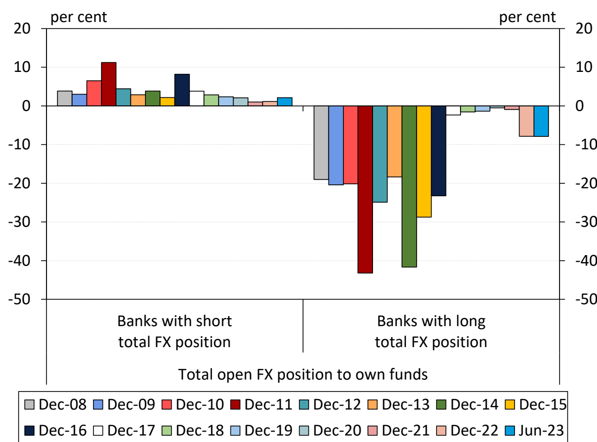
Source: MNB

Chart 37: Open FX position of the domestic banking sector



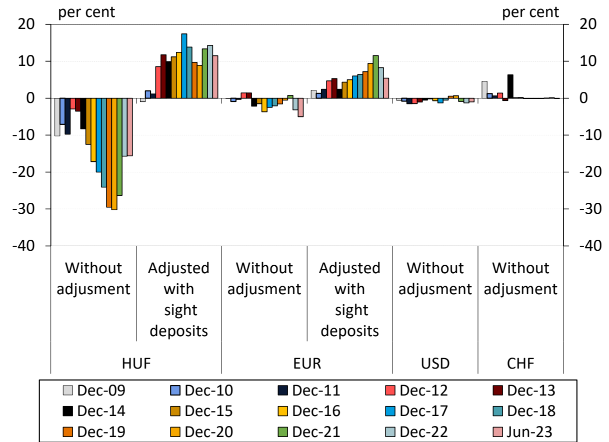
Source: MNB

Chart 38: The exchange rate exposure of the banking sector



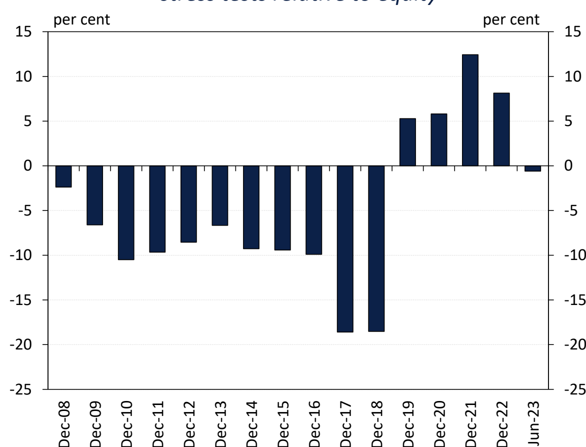
Source: MNB

Chart 39: 90-day re-pricing gap of the banking sector



Source: MNB

Chart 40: Estimated maximum loss based on interest rate risk stress tests relative to equity

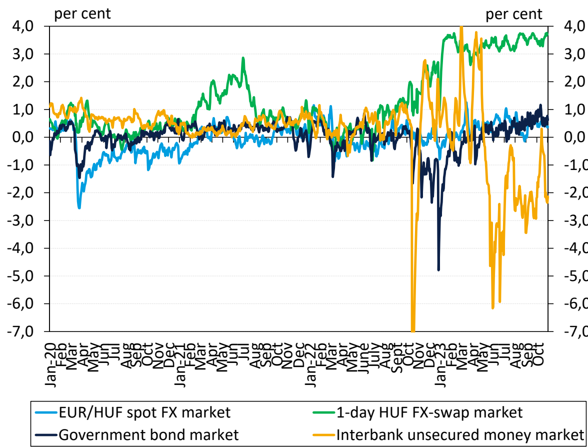


Source: MNB

Chart 41: Liquidity index

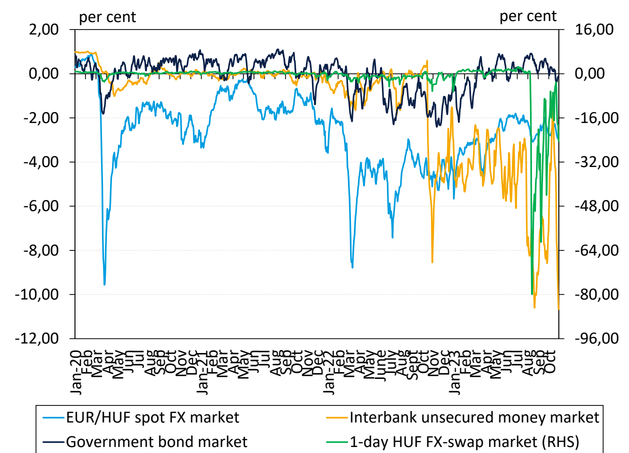
Source: MNB, KELER, Bloomberg

Chart 42: Liquidity indices of sub-markets



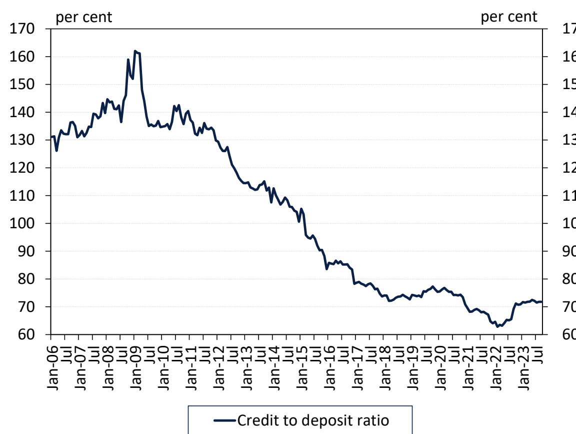
Source: MNB, KELER, Bloomberg

Chart 43: Liquidity sub-indices of bid-ask spreads of the major domestic financial markets)



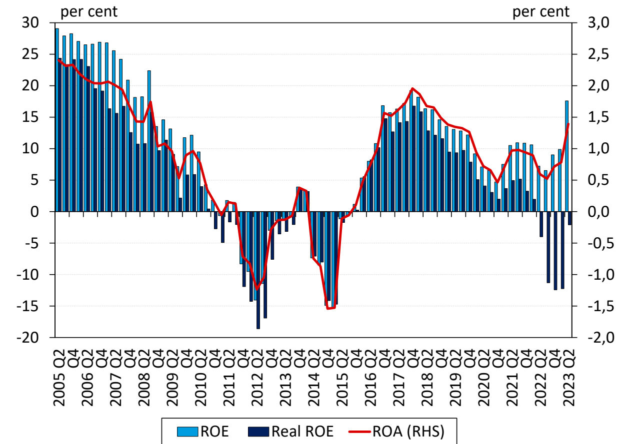
Source: MNB, KELER, Bloomberg

Chart 44: Credit to deposit ratio of the banking sector



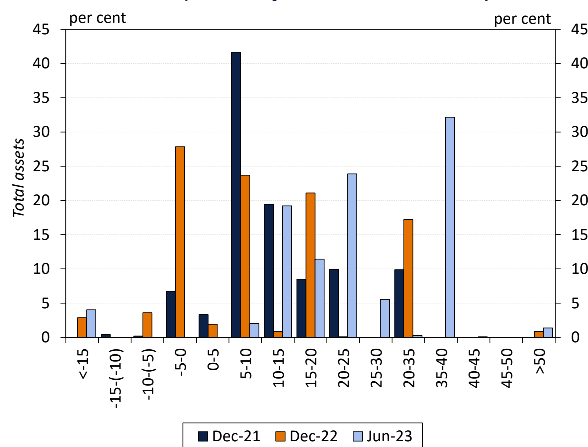
Source: MNB

Chart 45: ROA, ROE and real ROE of the credit institution sector



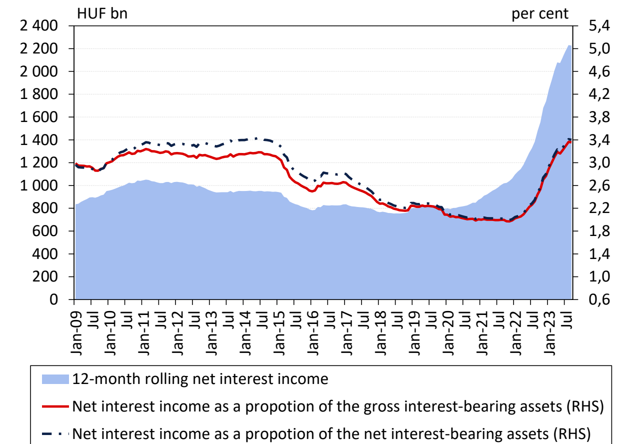
Source: MNB

Chart 46: Dispersion of banks' total assets by ROE



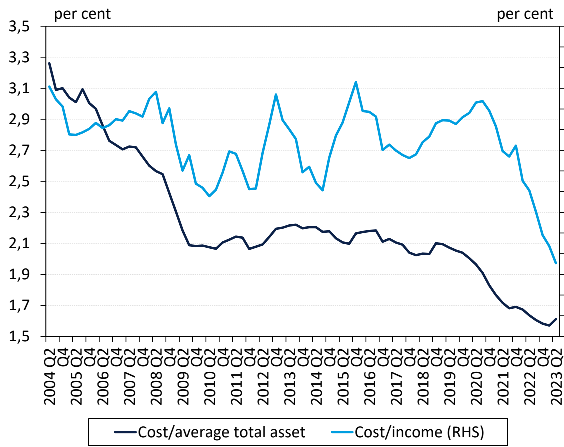
Source: MNB

Chart 47: Net interest income as a proportion of the gross and net interest bearing assets in the credit institution sector



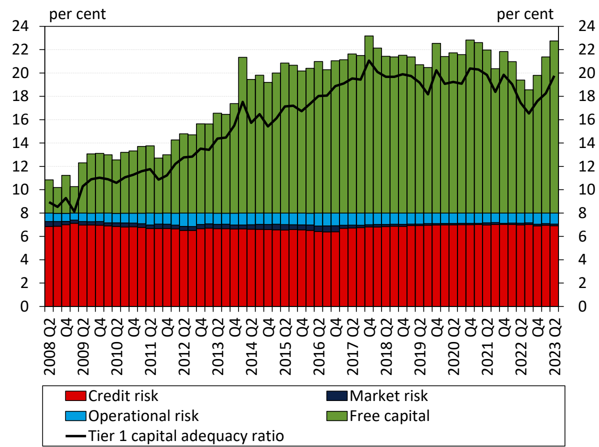
Source: MNB

Chart 48: Operating efficiency indicators of the banking sector



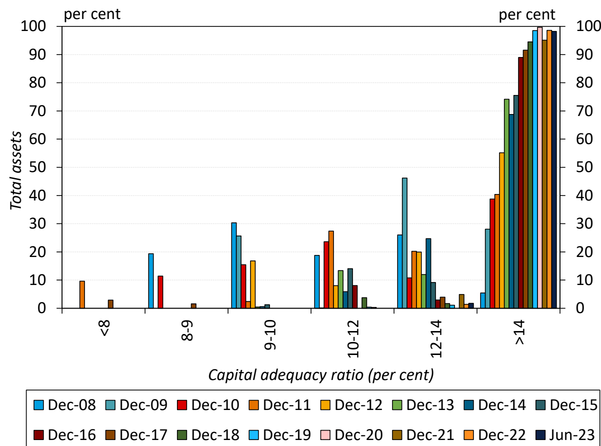
Source: MNB

Chart 49: Banks' capital adequacy ratio (CAR) and Tier 1 capital adequacy ratio



Source: MNB

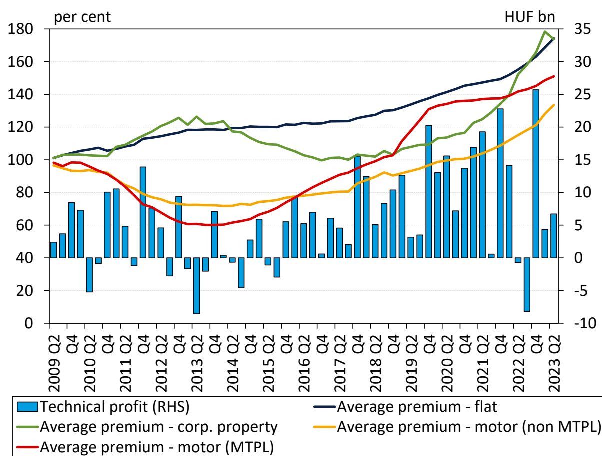
Chart 50: Dispersion of banking sector's total assets by capital adequacy ratio



Source: MNB

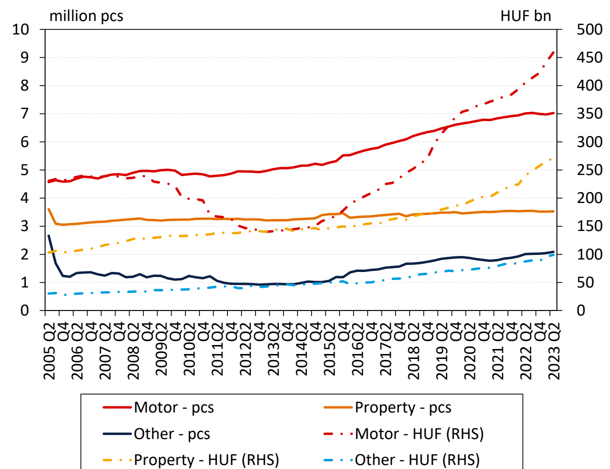
7. Institutional investors

Chart 51: Underline data of insurance tax



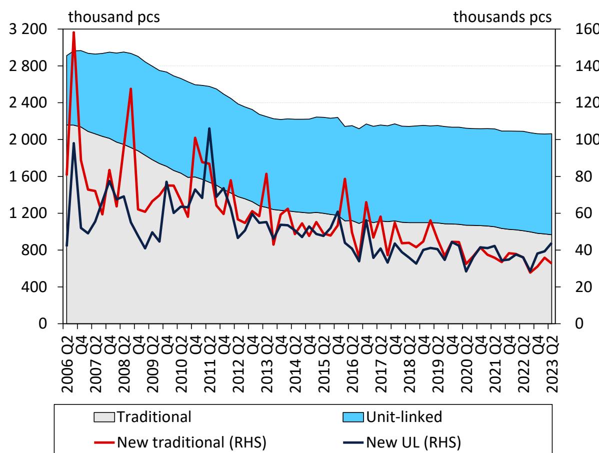
Source: MNB

Chart 52: Development of the outstanding amount of non-life insurance



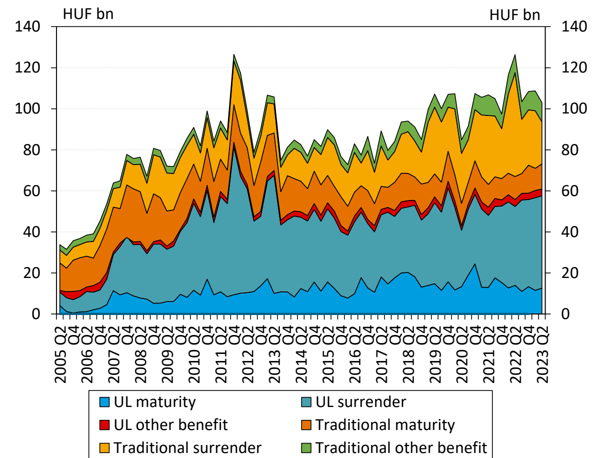
Source: MNB

Chart 53: Development of the outstanding amount of life insurance



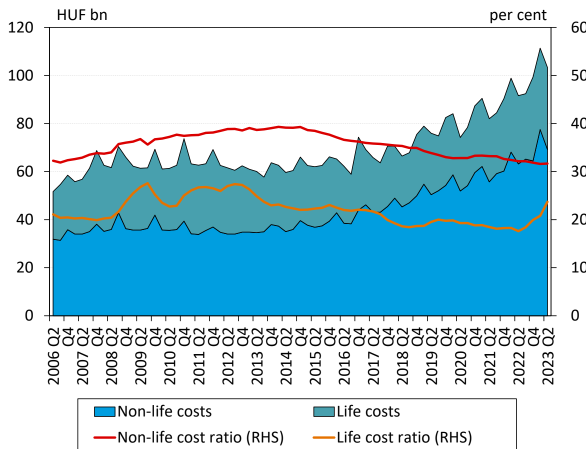
Source: MNB

Chart 54: Development of the outstanding amount of life insurance benefits



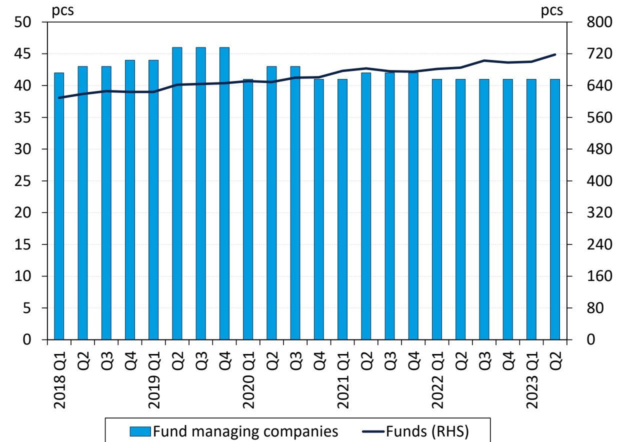
Source: MNB

Chart 55: Costs in the insurance sector



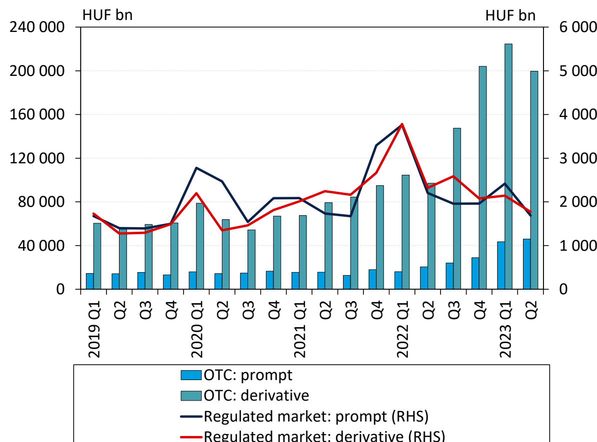
Source: MNB

Chart 56: Number of investment fund managing companies and investment funds



Source: MNB

Chart 57: Capital market turnover of investment firms



Source: MNB

Notes to the appendix

The chart date (e.g. 2020) means the end of the year (the 31st of December) unless indicated otherwise.

Chart 1:

The increased value of the indicator shows declining risk appetite or increasing risk aversion.

Chart 2:

VIX: implied volatility of S&P 500, MOVE: implied volatility of US Treasuries (Merrill Lynch).

Chart 4:

The fundamental development of debt is not influenced by the conversion between unallocated and bullion balances, thus this effect has been excluded.

Chart 5:

Excluding intercompany loans.

Chart 6:

The open FX position of households has turned because of the FX conversion. The compensation of this is shown at banks temporarily, then is was got to the consolidated state with the MNB.

Chart 9:

Disposable income is estimated by the MNB using household consumption, investment and financial savings data.

Chart 11:

Number of bankruptcy proceedings of legal entities, aggregated as of the date of publication and cumulated for 4 quarters, divided by the number of legal entities operating a year before. It also includes economic organizations subject to liquidation proceedings from bankruptcy, voluntary liquidation and forced deletion proceedings.

Chart 12:

Number of bankruptcy proceedings of legal entities, aggregated as of the date of publication and cumulated for 4 quarters, divided by the number of legal entities operating a year before. It also includes economic organizations subject to liquidation proceedings from bankruptcy, voluntary liquidation and forced deletion proceedings.

Chart 13:

The 5-year forward forint risk premium as of 5 years from now, compared to the euro forward yield (3-day moving average) and the 5-year Hungarian credit default swap spread.

Chart 16:

Historic volatility: weighted historic volatility of the exchange rate (GARCH method). Implied volatility: implied volatility of quoted 30-day ATM FX options.

Chart 17:

Spread on the 3-month BUBOR and EURIBOR. Loans with floating interest or with up to 1-year initial rate fixation. Adjusted for money market loans > 1M EUR since 2015.

Chart 18:

Spreads based on the APR.

Chart 19:

2002 average = 100 per cent.

Chart 22:

Nominal values, on current rates. Based on consolidated data (previously only unconsolidated data were available for the euro area).

Chart 25:

Exchange rate adjusted values.

Chart 26:

The individual loan loss coverage range covers the banks with at least 2 per cent share in corporate lending.

Chart 27:

In brackets below the names of sectors the weights within corporate credit portfolio are indicated for end-of-observation period.

Chart 34:

The category 0-30 per cent contains also the loans disbursed without mortgage before 2008.

Chart 35:

The range of LLP coverage on the individual level refers to the larger banks.

Chart 37:

An increase in the swap stock stands for swaps with a long forint spot leg. Based on the daily FX reports of credit institutions. Calculated from swap transactions between credit institutions and non-resident investors. Revisions due to reporting errors and non-standard transactions can lead to significant subsequent modifications of the data series. The data series does not include swap transactions between branches, specialised credit institutions, cooperative credit institutions and non-resident investors. The swap stock is the sum of termin legs calculated at actual foreign exchange rates.

Chart 39:

From December 2019, the values for the security portfolio, the IRS portfolio, as well as for loans and liabilities were calculated on a cashflow basis instead of a contract basis. In addition, for loans and liabilities, from December 2019 onwards, we could only take into account the remaining maturities, not the time remaining until repricing.

Chart 40:

The interest rate risk stress test indicates the two-year projected result of an extreme interest rate event; in this scenario this event is a parallel upward shift of the yield curve by 300 basis points. For calculating the results, from December 2019 onwards, we applied the interest rate risk model detailed in Box 10 of the December 2019 Financial Stability Report. While for earlier calculations we assumed shocks of each currency's yield curve, for these new calculations we only assumed the shock-like upward shift of the HUF curve.

Chart 41:

A rise in the liquidity index indicates an improvement in the liquidity of the financial markets. The indicator is the unweighted average of the aggregate liquidity ratios of the sub-markets shown in Chart 42.

Chart 42:

Each aggregate liquidity index of a sub-market is the unweighted average of exponential moving averages normalized by the mean and standard deviation of the values of four sub-indices (number of transactions, average transaction size, bid-ask spread, and return to volume indices) between 2013 and 2017. An increase in the aggregate liquidity index indicates an increase in the liquidity of the given sub-market.

Chart 43:

A rise in the indices represents a narrowing bid-ask spread, thus an increase in the tightness and liquidity of the market. The liquidity-index of HUF FX swap market includes the data of USD/HUF and EUR/HUF segments, taking into account tom-next, overnight and spot-next transactions. The earlier version of the liquidity index included only the tom-next USD/HUF transactions.

Chart 44:

Client loans include loans and bonds of non-financial institutions, household loans, loans and bonds of financial and investment enterprises, government loans, municipal loans and municipal bonds. Client deposits include the deposits of non-financial institutions, household deposits, deposits of money market funds, deposits of financial and investment enterprises, government deposits and municipal deposits. The loan-to-deposit ratio is exchange-rate-adjusted with respect to the last period.

Chart 45:

ROE: pre-tax profit/average (equity - balance sheet profit).

ROA: pre-tax profit/average total assets.

Interim data are annualised.

Pre-tax profit: previous 12 months.

Average total assets: mean of previous 12 months.

Average (equity - balance sheet profit/loss): 12 month moving average.

Deflator: previous year same month=100 CPI (per cent).

Chart 46:

Pre-tax profit.

Chart 47:

Based on aggregated individual, non-consolidated data.

Net interest income: 12-month rolling numbers, the difference of interest revenue and interest expenditure.

Gross interest bearing assets: 12-month average numbers, total exposure.

Net interest bearing assets: 12-month average numbers, exposure minus the provision.

Chart 48:

Cost: previous 12 months.

Income: previous 12 months.

Average total asset: mean of previous 12 months.

Chart 49:

Capital adequacy ratio (CAR) = (total own funds for solvency purposes/minimum capital requirement)*8 per cent.

Tier 1 capital adequacy ratio = (tier 1 capital after deductions/minimum capital requirement)*8 per cent.

Chart 52:

Motor insurance premiums contains insurance tax from 2019.

Chart 57:

Sum turnover of investment firms and credit institution.

Ferenc Deák

(17 October 1803 – 28 January 1876)

Politician, lawyer, judge at a regional high court, member of parliament, minister for justice, often mentioned by his contemporaries as the ‘wise man of the homeland’ or the ‘lawyer of the nation’. Eliminating the ever-recurring public law disputes and clarifying the relationship between the ruling dynasty and the hereditary provinces, he not only reinforced the constitution and the existence of the nation but also paved the way for the development as well as the material and intellectual enrichment of Hungary.

Deák was actively involved in preparing the laws for the parliamentary period between 1839 and 1840, and he became an honorary member of the Hungarian Academy of Sciences in 1839. After the death of his elder brother in 1842, Deák the landowner liberated his serfs and voluntarily undertook to pay taxes proving that he was an advocate of economic reforms not only in words but also in deeds. He refused to fill the position of delegate to the 1843/44 parliament because he disagreed with the idea of having to be bound by the instructions received as delegate, and as a moderate political thinker he had his concerns about the radical group led by Kossuth.

He remained level-headed also with regard to the evaluation of the events of 1848, he was afraid of violence and rejected it as a political tool. All the same, he accepted the post of minister for justice in the government of Lajos Batthyány. In December 1849 he was arrested for revolutionary activities, but later on, after being tortured for information, he was released. From then on he acted as the intellectual leader of the national passive resistance movement, and believed from the very beginning that Austrian centralisation was doomed to fail due to its inherent faults. He became the leader of the Address Party in the parliament of 1861, and even though they failed to bring the monarch to accept their ideas, he increasingly managed to take over the initiative over time.

Based on his earlier proposals, in 1865 Deák published his so-called Easter Article – which radically influenced Hungarian politics of the time – and until 1867 he virtually devoted all his time to reaching a compromise with the Hapsburg dynasty. After the compromise between Austria and Hungary ratified in 1867, Hungary was able to return to the path of social and economic development.

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