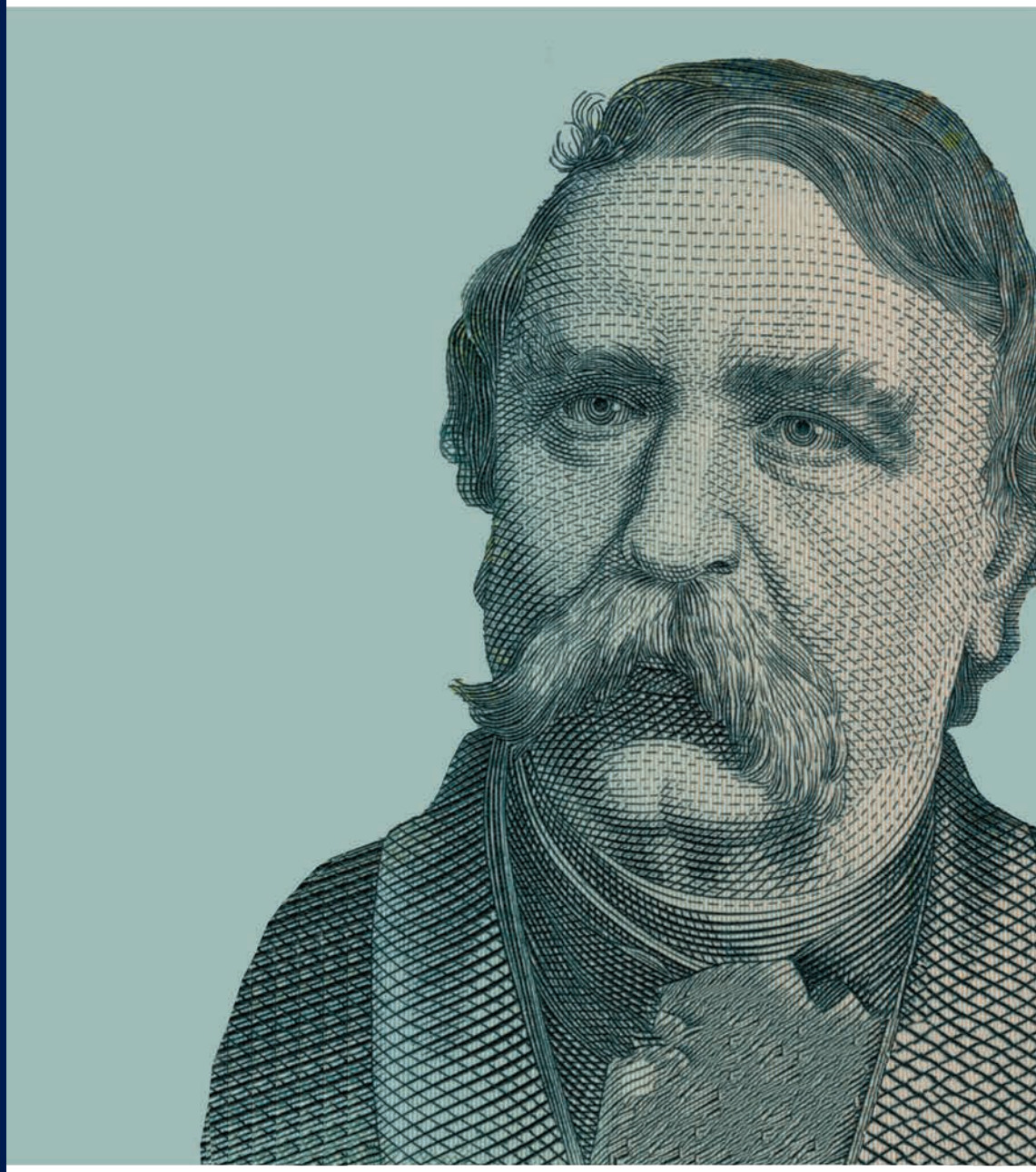
FINANCIAL STABILITY REPORT



2022
MAY

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

Ferenc Deák

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Published by the Magyar Nemzeti Bank

Publisher in charge: Eszter Hergár

H-1013 Budapest, Krisztina körút 55.

www.mnb.hu

ISSN 2064-8863 (print)

ISSN 2064-9452 (on-line)

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 the Central Bank Act.

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

The MNB shall establish the macro-prudential policy for the stability of the entire system of financial intermediation, with the objective to enhance the resilience of the system of financial intermediation and to ensure its sustainable contribution to economic growth. To that end and within the limits specified in the Central Bank Act, the MNB shall explore the business and economic risks threatening the system of financial intermediation as a whole, promote 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 shall contribute to the balanced implementation of the function of the system of intermediation in financing the economy through stimulating lending and by restraining lending it in the event of excessive credit outflow.

The primary objective of the Financial Stability Report is to inform stakeholders about the topical issues related to financial stability, and thereby raise the risk awareness of those concerned as well as 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 make a contribution 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 and Foreign Reserve Management Executive Directorate, the Lending Incentives Directorate and the Digitalisation Directorate, under the general direction of Gergely FÁBIÁN, Executive Director for Financial System Analysis and Statistics.

The Report was approved for publication by Barnabás VIRÁG, Deputy Governor.

The Report incorporates the Financial Stability Council's valuable comments and suggestions following its meetings on 12th April and 17th May 2022, and those of the Monetary Council following its meeting on 26th April 2022.

This Report is based on information in the period to 30th April 2022. Since data frequency is divergent through the analyses, the analysis horizons may also alter.

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Executive Summary

Hungarian banks were prepared when they faced a major increase in risks as a result of the war between Russia and Ukraine: capital and liquidity reserves ensure the institutions are resilient, even in the event of protracted geopolitical tensions. However, risks have risen amid the uncertain environment. We expect the dynamics of the private sector's credit expansion to decline as a result of the negative effects of the war on the real economy and the tightening interest rate environment, in parallel with the rise in inflation. In certain sectors, the slowdown in the real economy and the rise in energy prices entail an increase in credit risks. Prices increased further in the housing market, households are becoming more stretched financially in line with the buoyant lending for housing.

The war that broke out between Russia and Ukraine at the end of February has changed global economic prospects significantly. *The expected effects may be stronger in Europe, and especially in the CEE region, due to the geographical proximity and the greater weight of trade with the countries affected by the war. The war and the sanctions are boosting existing inflation processes through the rise in commodity and energy prices, a situation exacerbated by increased supply difficulties as well. According to the guidance of the world's leading central banks, monetary conditions need to be tightened in order to achieve central bank targets. Growing inflation, the changed monetary environment and the uncertainty due to geopolitical tensions may lead to further money market turbulence.*

Yields increased over the entire yield curve, the short end was moved by the interest rate steps of the central bank, while the long end was primarily moved by a deterioration in investor sentiment*. In line with the tightening monetary environment, the MNB's programmes expanded the banking sector's liquidity only to a small degree. At the same time, the sector has significant liquidity reserves, which provides strong protection amid elevated risks. According to our liquidity stress test exercise, the sector would meet the regulatory requirements even in the case of a stress much more severe than the baseline scenario.*

Following the phasing out of the general moratorium, a slight deterioration is seen in the banking sector's portfolio quality. *After the phasing out of the general moratorium in October 2021, the non-performing loan ratio moved from its historical low, but it is still below five per cent. The rise is attributable to loans that are non-delinquent but still classified by banks in the non-performing category. At the same time, loan loss coverage is high at sector level, in the case of non-performing loans and Stage 2 loans alike, which limits the degree of potential further losses. At end-2021, 2 per cent of corporate loans and 6 per cent of household loans participated in the narrowed moratorium launched in November 2021.*

Following the end of the interest rate stop, repayment instalments of certain mortgage loans will increase significantly. *In view of the advanced amortisation, the often imminent maturities and the low loan-to-value ratio on average, on the whole the increase in credit risk stemming from the rising interest rate environment is a manageable risk for the banking sector. Nevertheless, following the phasing out of the interest rate stop, major increases in repayment instalments are expected for one quarter of variable-rate mortgage loans. Debtors can defend themselves against a further increase in interest rates by switching to fixed-rate loans, which is also helped by the fact that, for the time being, the change in the yield environment has only been partly priced into client interest rates. Besides the modest increase in the credit risk of outstanding loans, households are becoming more stretched financially in new lending as well. In parallel with the rise in house prices, increases in contract amounts and longer original maturities of loans as well as higher debt-to-income ratios are being seen.*

The private sector's loan portfolio also expanded dynamically in 2021 H2, which is explained by buoyant demand, ample lending capacities of banks as well as subsidised credit schemes. *Also taking into account the corporate bonds subscribed by banks, credit institutions' loans and bonds outstanding vis-à-vis the non-financial corporate sector increased by 18.4 per cent, while outstanding loans of the SME sector grew 16.8 per cent year-on-year. Banks did not experience any fall in loan demand, but according to an April 2022 survey they expect a major shift in composition: the demand for working capital loans may increase, the demand for investment loans may decline, and they expect FX funding to gain greater ground again. Household loans outstanding also expanded dynamically in 2021 H2, housing loan disbursements, which were at a historical high, received major support from the home purchase subsidies and*

from the FGS Green Home Programme as well. Due to the effects of the war between Russia and Ukraine on the real economy and the major rise in interest rates, the annual growth rate of corporate loans outstanding may decelerate in 2022 H2. In addition, lending to households is expected to slow down.

***The banking system achieved outstanding results in 2021, but looking ahead, the profitability of the sector is jeopardised by numerous risks**. After-tax income of the credit institutions sector exceeded the profit of the pre-pandemic year; a higher balance sheet total and the related rise in net interest income were the main contributors to the increase in profits. Although the return of banks in Hungary is one of the highest across EU countries, exposure to the war and the impacts of the sanctions on the economy may curb the sector's profitability through increasing risk costs. The consolidated capital adequacy ratio of the banking sector declined slightly to 18.6 per cent in H2, which was the result of a surge in the total risk exposure amount in Q3. The sector's free capital above the overall capital requirement amounted to 5.3 per cent. Together with the annual profit, taking into account the usability of the 2.5 per cent capital conservation buffer until June 2022 and the capital increases implemented in Q1, 98 per cent of the sector have buffers exceeding 4 per cent. According to our stress test exercise, the banking sector's capital adequacy ratio deteriorates in the first year of the stress scenario, but it improves as early as the second year as a result of the declining loan losses, and in aggregate terms the sector has an adequate capital position.*

***The inadequate feed-through of central bank interest rate hikes into deposit rates may be coupled with an increase in funding risks in the medium term.** The rise in the MNB base rate brought an increase in interest rate conditions for the credit and deposit markets, although the speed of the feed-through of interest rate hikes varies across markets. In the case of household deposits, the interest rate on new term deposits increased to a much smaller degree than the base rate, and it is still close to 0 per cent on demand deposits, which account for 80 per cent of all deposits. Accordingly, in the current inflation environment the real value of household deposits amounting to around HUF 10 thousand billion is declining significantly; in the medium term, this may result in a shift in the structure of deposits towards term deposits, or in an extreme case, prompt depositors to turn towards alternative investment possibilities and service providers.*

***In the medium term, the overvaluation of residential properties is a risk to banks' balance sheets, which may result in an increase in credit risks.** Stemming from the significant price increases in the housing market, the overvaluation of housing prices has risen to a historical high at national level according to our estimation. The European Systemic Risk Board (ESRB) issued a warning to Hungary because of the risks of increasing overvaluation and indebtedness. The significant price rise in recent years made home purchasing less affordable for those who cannot claim family support and home purchase subsidies, and looking ahead we expect a general decline in housing market demand as a result of the increase in interest rates on market-based housing loans. However, depending on these developments, the cyclical financial systemic risks related to the residential real estate market and lending may increase further, and the MNB may possibly, inter alia, raise the countercyclical capital buffer rate thereby increasing the resilience of the banking system. Supply will expand considerably in various segments of the commercial real estate market in the coming years, but in certain segments it is questionable whether demand will also be able to keep up with the expansion. Project lending expanded significantly in 2021, and after many years, loans outstanding increased as a percentage of own funds as well, but this ratio is still much lower than in 2008.*

1. External environment: impaired growth prospects and exacerbated inflation due to Russia-Ukraine war

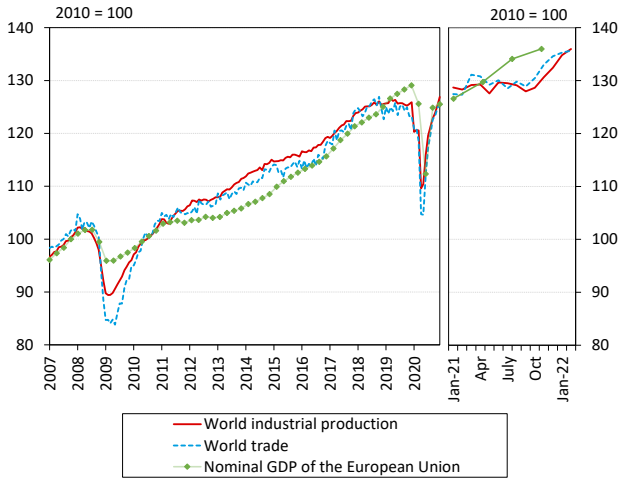
The risks stemming from the changes in the external environment have increased considerably during the past six months. In the early months of 2022, markets were mostly affected by rising inflation, deepening geopolitical tensions as well as the economic policy measures and actions taken by central banks in response to the above developments. The outbreak of the war between Russia and Ukraine broke the momentum of the recovery that was taking place parallel to the improvement in the pandemic. Firstly, the war amplified the risks that had already been identified before (e.g. the rise in inflation and the frictions in supply chains), and secondly, it resulted in new ones as well.

The rise in inflation as well as the protracted war have had an adverse impact on growth prospects, and thus fears of stagflation risks have become stronger. Increasing prices reduce households' disposable income, which has an unfavourable effect on the profitability of companies. Due to the rise in inflation risks, an increasing number of central banks are opting for monetary tightening, which is necessary to mitigate these risks, but at the same time, the tightening measures expand debt financing burdens. The rising interest rate environment negatively affects the valuation of real estate and other investments.

Geopolitical risks are already feeding through into the economy via numerous channels in the short run, but while the deterioration in global growth prospects and the rise in commodity prices impact on almost all economic agents, direct financial and financing relations with the countries affected by the war concern only a smaller circle of stakeholders. The valuation of foreign banks on the Russian and Ukrainian markets dropped considerably following the news about the Russian attack, but on the whole, the European banking systems were prepared upon the outbreak of the conflict between Russia and Ukraine, and the substantial capital and liquidity reserves make the credit institutions shock resistant.

1.1. Improvement in global economic activity set back by the war

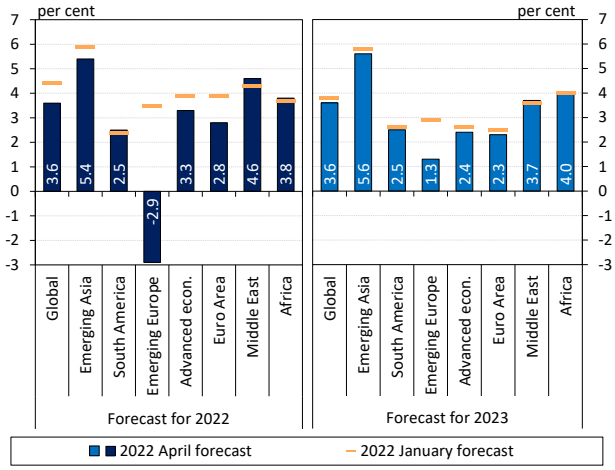
Chart 1: Development of global industrial production, world trade volumes and nominal GDP of the EU



Note: Seasonally adjusted data. Source: CPB, Eurostat

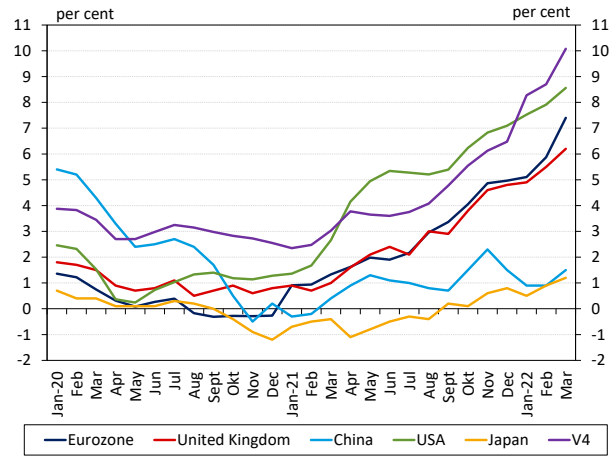
The Russia-Ukraine war broke out when the global economy was improving, and inflation risks were significant. Global industrial production was expanding dynamically and global trade volumes were rising at the beginning of 2022. Global industrial production had already been above the pre-pandemic level since September 2020, and following a temporary stall of a couple of months it had started to grow again at end-2021 as a result of the improvement in the pandemic and governments' active measures supporting the economy (Chart 1). A similar trend is seen in the volume of global trade, which expanded in the same period despite supply chain disruptions. Nevertheless, the improving trend observed in the real economy was accompanied by a major increase in inflation. Growth in the real economy is surrounded by significant uncertainty again due to the deepening of geopolitical risks and the more

Chart 2: IMF forecasts for real GDP growth in 2022 and 2023



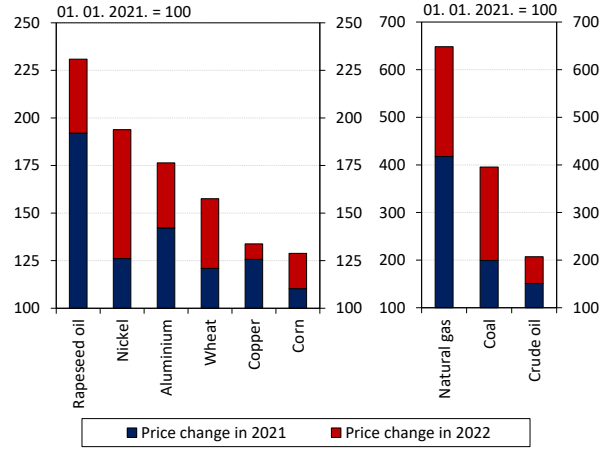
Source: IMF

Chart 3: Inflation trends by country and region



Note: Eurozone, V4: HICP; United Kingdom, China, Japan: CPI; USA: urban CPI. Source: OECD

Chart 4: Changes in major commodity prices and crop prices in 2021 and early 2022



Note: Data as of 31 March 2022. Source: Refinitiv

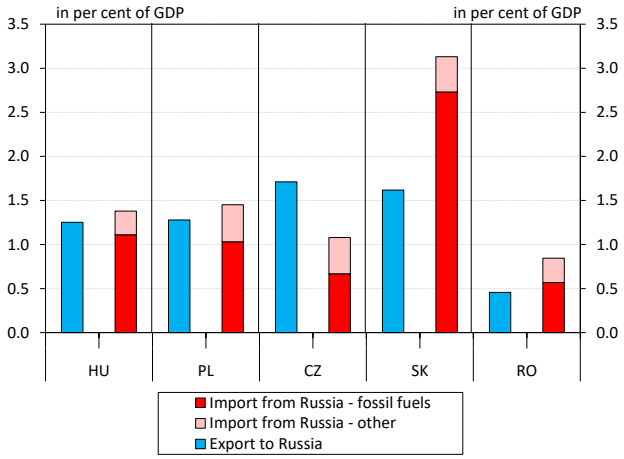
extensive pandemic lockdowns in China, while inflation risks increased further from their already high levels.

Growth prospects around the world were impaired by the outbreak of the war. According to the April forecast of the International Monetary Fund (IMF), real GDP growth of the global economy may reach 3.6 per cent in both 2022 and 2023, representing declines of 0.8 and 0.2 percentage points, respectively, compared to the January projection (Chart 2). The significant worsening in growth prospects is primarily attributable to the economic consequences of the Russia-Ukraine war. According to the forecast, compared to end-2021 the economy in the developing and emerging European area, which is experiencing the most serious adjustment, may contract by some 2.9 per cent by end-2022 as a consequence of the war, which is primarily explained by the economic downturns of 35 per cent and 8.5 per cent estimated for the Ukrainian and Russian economies, respectively. The war and the sanctions against Russia are generating major economic impacts that feed through, primarily via the globally rising commodity prices, the deterioration in trade relations and – to a lesser degree – via financial market channels.

The war has made energy much more expensive, and exacerbated the already existing supply frictions, leading to a further increase in inflation. Some of the causes of inflation are related to the pandemic; both postponed demand and insufficient supply added to the prices. The fiscal and monetary easing introduced simultaneously all over the world during the first waves of the pandemic also contributed to the increase in aggregate demand. The significant price rises of energy as well as the growing commodity prices and transportation costs increased inflation further in the EU and the USA (Chart 3), which was exacerbated by supply chain disruptions and the global shortage of some key products (mainly chips). The level and duration of inflation are primarily influenced by the intensive increases in energy prices, certain commodities as well as essential food and crops (Chart 4). In early 2022, inflation in several developed countries (USA, UK) rose to levels unseen for decades.

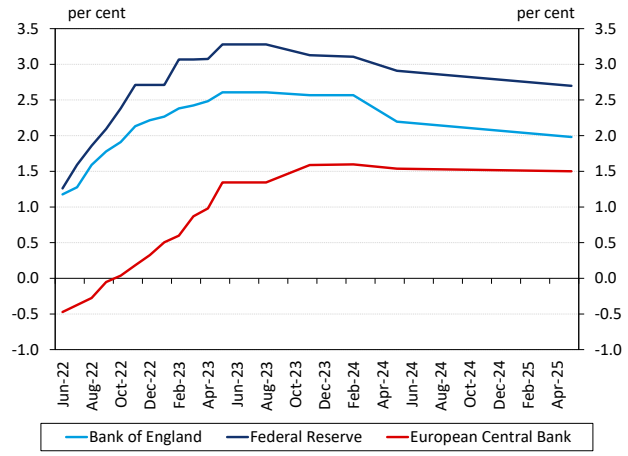
The economies of the European Union are facing serious challenges because of the armed conflict between Russia and Ukraine. The conflict radically rearranged the risk map, inducing major changes in various areas. While Ukraine is a primary determinant in terms of food supply, Russia is one of the EU's most important suppliers of fossil fuels (crude oil, natural gas and coal), and is an

Chart 5: Trade of CEE countries with Russia in 2020



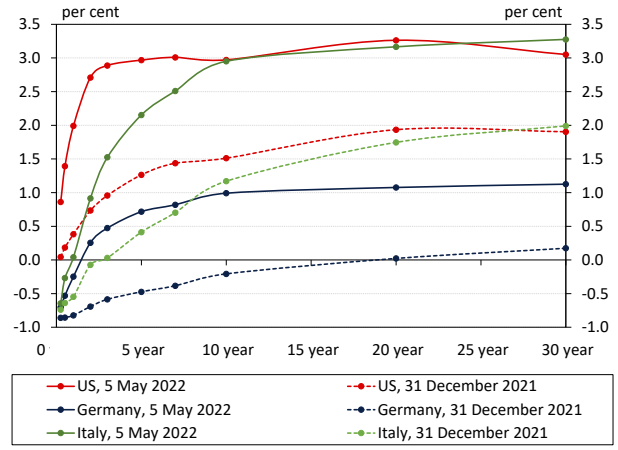
Source: Observatory of Economic Complexity, IMF

Chart 6: Expected interest rate path of major central banks based on market pricing



Note: Expected interest rate path is based on EONIA forward yields for the ECB, and interest rate swaps for the Fed and the BoE. Source: Bloomberg

Chart 7: Changes in yield curves in selected developed countries

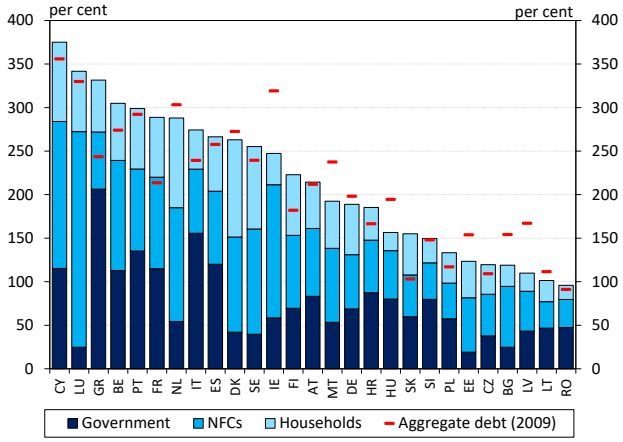


Source: Bloomberg

important market player in the global exports of a number of key raw materials (nickel, palladium and iron ore). EU Member States are energy and commodity importers, and thus the price explosion that took place in the global market significantly impairs the terms of trade of the EU as well. There may also be a major drop in the exports to Russia and Ukraine due to the war, and economic sanctions have an indirect effect on the economic performance of EU Member States. Overall, the countries that strongly depend on energy imports and the ones that have extensive bank presence are the most exposed to the effects of the conflict. The economies and inflation developments of the CEE region are mostly affected by the developments surrounding energy imports from Russia, as the weight of the latter in the exports of the countries of the region is relatively low (Chart 5), while imports of the region from Russia are dominated by fossil fuels. Therefore, the impact of an energy price shock may be much more severe for the countries of the CEE region than the narrowing of export possibilities to Russia.

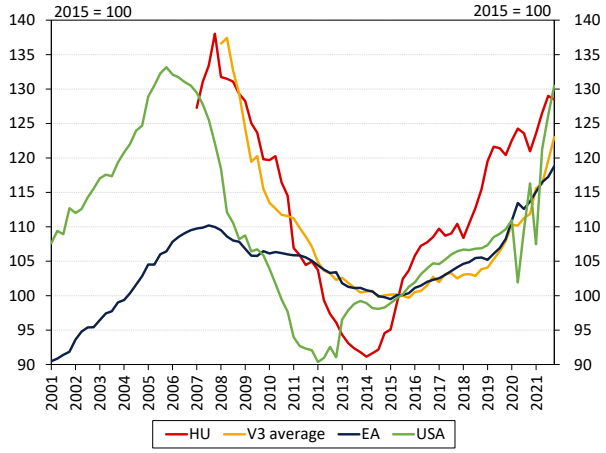
Following the central banks of the region, the leading central banks also opted for monetary tightening. In 2021 H2, the central banks of the CEE region were among the first to start an interest rate hike cycle, which was driven by the mitigation of money market turbulences in addition to curbing inflation. From the major central banks, it was the Bank of England (BoE) that first raised its interest rate (15 basis points) in December 2021, followed by two 25 basis point increases in February and May 2022, and a decision was also made in February to gradually phase out its asset purchase programme. The Fed raised the policy rate by 25 basis points in March and 50 basis points in May 2022, which may be followed by further tightening in the remaining part of the year (Chart 6). The ECB and the Bank of Japan (BoJ) are still waiting; the base rate in the euro area has been zero per cent since 2014, while in Japan it has been -0.10 per cent since 2016. According to market pricing, the ECB's current interest rate conditions may tighten as early as the summer; in total, two 25 percentage point increases are expected for 2022. In addition to the rise in short-term yields as a result of tightening central bank measures, in the past months the yield curves on the government securities markets of developed countries has shifted upwards at the longer maturities as well in view of the inflation risks (Chart 7), and the inversion of the yield curve indicated an increase in the fears of recession in the US economy.

Chart 8: Changes in EU Member States' debt-to-GDP ratios between 2009 and 2020



Source: Eurostat

Chart 9: Developments in house price-to-income indicators in selected countries and regions

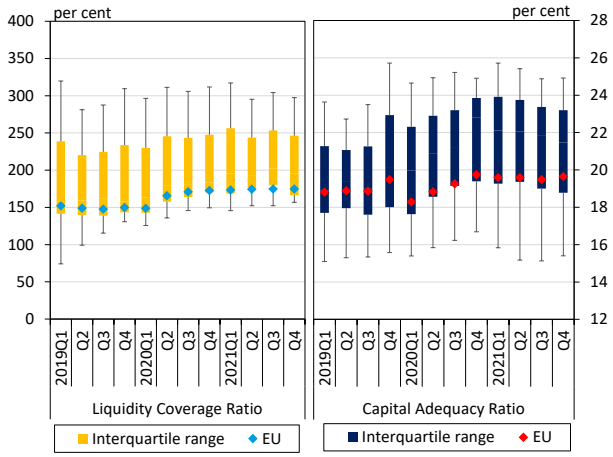


Note: V3 average = simple average of the indicators of Czech Republic, Poland and Slovakia. Source: OECD, MNB

Risks related to debt sustainability are coming to the fore in the rising interest rate environment. Debt financing burdens are increasing all over the world due to monetary tightening. Both sovereign and private sector indebtedness was up in the EU Member States in the persistently low interest rate environment. At the end of 2020, EU Member States' debt-to-GDP ratios were higher than in 2009 in more than half of the Member States (Chart 8). The tightening interest rate environment makes the repricing debt elements more expensive, while new disbursements raise the interest burdens in the case of sovereigns with a high budget deficit. Moreover, the expected deceleration in economic growth may have an adverse impact on economic agents' debt servicing ability as well. In addition, the sanctions introduced due to the conflict between Russia and Ukraine as well as the cost shocks occurring as a consequence of the extraordinary rise in energy prices may significantly influence the profitability of companies interested in the sanctioned markets, which has a negative effect on the debt servicing ability as well.

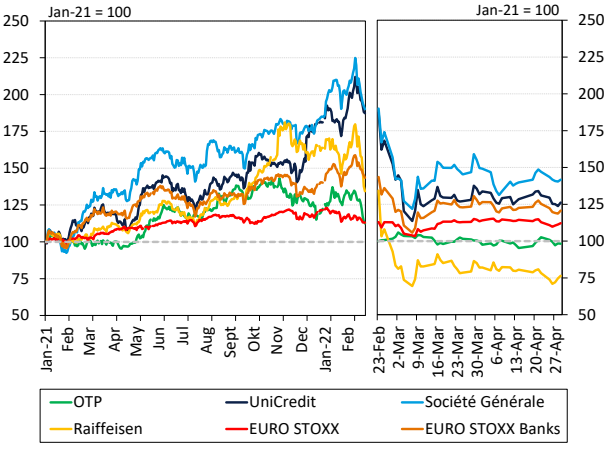
The risk of overvaluation is increasing in the residential real estate markets of developed economies as well as in our region. Housing prices in the European Union and the United States have been rising for more than 7 years, exceeding the increase of incomes, and the pace of house price growth has accelerated substantially over the past two years (Chart 9). Between the fourth quarters of 2019 and 2021, the value of the housing price-to-income ratio increased by almost 10 per cent in the euro area, 19 per cent in the USA, 14 per cent in the V3 countries and almost 7 per cent in Hungary. The house price-to-income ratio in the euro area has already surpassed its pre-global financial crisis peak by 8 per cent, while in the USA it falls short by only 2 per cent. The persistently low interest rate environment was benign to the financing of real estate purchases by loan, and in the current economic environment, due to rising inflation, some investors may turn to residential real estate, which could further fuel the residential real estate market. At the same time, high house prices combined with rising lending interest rates could lead to a gradual exclusion of buyers for residential use from the market, which could lead to a correction in house prices through a contraction in demand. The possible development of the housing market overvaluation could lead to an increase in credit risks on banks' balance sheets, which poses a financial stability risk to the sector.

Chart 10: Distribution of LCR and CAR in European banking systems



Note: The EBA sample consists of 161 European banks. Based on non-consolidated data. Source: EBA

Chart 11: Changes in the valuation of EU banks most affected by the Russian-Ukrainian conflict



Source: Yahoo Finance

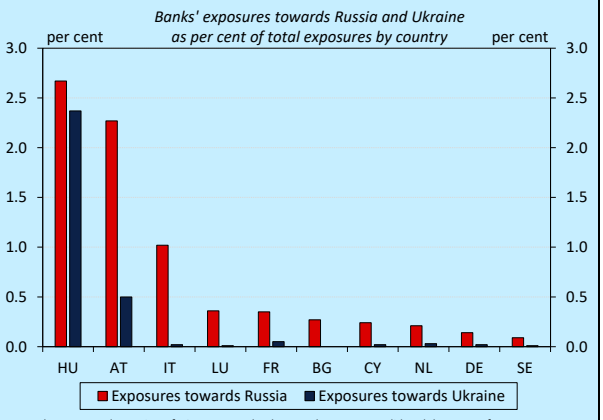
1.2. Russia-Ukraine conflict poses a moderate risk to the European banking sector

European banks' capital and liquidity reserves make the banking sectors resistant to external shocks. The European banking systems were in a prepared state when the conflict between Russia and Ukraine broke out. The capital adequacy ratio (CAR) of the EU banking sector as a whole amounted to 19.6 per cent in 2021 Q4. In addition, the banking sectors also have ample liquidity, and all the banking systems significantly exceed the 100 per cent regulatory limit of the liquidity coverage ratio (LCR) (Chart 10). Overall, the banking systems' liquidity and capital positions provide strong protection amid increased risks, but the regrouping of resources due to the conflict may set back the banking systems' digitalisation efforts. In the medium term this could jeopardise the competitiveness of institutions due to the cancellation of their digital development projects aimed at modernising operations, and may be a disadvantage at sector level when competing with emerging innovative players.

The deepening of geopolitical tensions had an adverse impact on the valuation of the most affected EU banks. The valuation of the banks on the Russian and Ukrainian markets started to decline as the geopolitical tensions increased, followed by major falls in bank share prices upon news about the Russian attack (Chart 11). Operating in both countries, Raiffeisen Bank International and OTP Bank were also among the banks that suffered the largest drop in share prices. The banks' share prices rebounded after the significant devaluation, and share prices seem to be stabilising even in the case of the most severely affected banks. Although the Russia–Ukraine conflict had an adverse effect on the EU's banking systems, this remained moderate, and all the banking groups concerned are able to manage the challenges stemming from the geopolitical risks (Box 1).

BOX 1: IMPACT OF THE RUSSIA–UKRAINE CONFLICT ON THE EUROPEAN BANKING SECTOR

The exposure of the European banking sector to Russia and Ukraine is not significant in aggregate terms, but concentrated. At the end of 2021, European banks' exposure to Russia and Ukraine amounted to some EUR 76 billion and EUR 11.5 billion, respectively[1], which was just slightly more than 0.3 per cent of the total exposure of EU banks. In the Russian market, banks of three European countries (Italy, France and Austria) account for more than half of the foreign banks' total exposure. Within that, the Italian UniCredit and the French Société Générale have the greatest exposures in Russia, but at group level these exposures are not considered significant. At the same time, the Austrian Raiffeisen Bank International has high exposures in the region, because it is among the major banks not only in Russia, but also in Ukraine and Belarus. With its active presence in both the Russian and Ukrainian markets, OTP is also one of the highly affected banks. In the case of both Raiffeisen Bank International and OTP, the main risk is not the degree of exposure, but the fact that a significant portion of their profits originated from this region, and losing these profits may have a major impact on the developments in the profitability indicators of both banking groups.



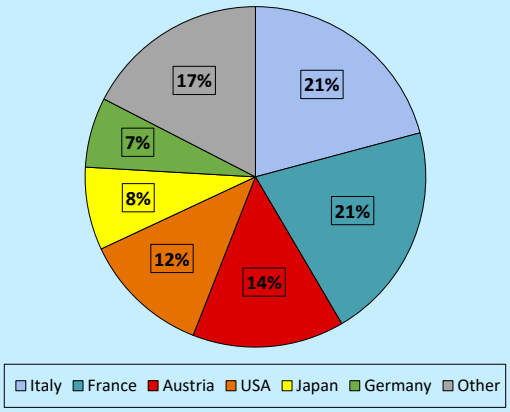
Note: The EBA sample consists of 161 European banks. Based on non-consolidated data. Data for Hungary consists of 4 banks. Source: EBA

The war between Russia and Ukraine impacts on European banks through various channels, and also affects credit institutions that do not have any direct exposures in the countries engaged in the war. In addition to the losses suffered on the assets in the countries of the belligerents, the impact on lending of the Russia–Ukraine conflict may primarily be reflected in banks' increased risk aversion, which could materialise in a decline in the volume of loans granted to companies that have exposures and trade relations in the region. The credit ratings of the Russian state and Russian companies were also withdrawn, and the decline in value of the bonds issued by them causes losses to banks that hold these bonds. However, banks may suffer losses on their other capital market instruments as well due to the general risk aversion and market volatility. The war has had an unfavourable effect on bank share prices too, whilst adding to risk spreads and increasing the costs of raising funds. Given that the EU banks operating in the Russian and Ukrainian markets are major players at international level, the adverse effects of the conflict may rapidly spread over Europe. The worsening of the real economy environment and the potential increase in loan and market losses are expected to reduce bank profitability, and may also result in a deterioration in banks' capital positions. The geopolitical conflict has significantly increased the risk of cyber-attacks against banks.

[1] Bank exposures mean total balance sheet exposure, and comprise: loans and advances, equity instruments, cash balances at central banks and other demand deposits, debt securities. According to the EBA database, which includes 161 banks that cover more than 75 per cent of the EU banking sector as a proportion of total assets.

In the case of OTP and Raiffeisen Bank International, the self-financing business model of the affiliate banks and the low exposures limit the degree of potential risks. It is also favourable that even taking into account the effects of the Covid-19 pandemic, when the external shock hit the European banks they were in a much better condition (liquidity, capital) than at the time of the global financial crisis. The potential loss of the banking groups concerned is manageable even if they have to quit the Russian market. Several foreign banks (Société Générale, Deutsche Bank, Commerzbank, JP Morgan, Goldman Sachs) have already announced their withdrawal from the Russian market, but the majority of leading European banks have not yet decided whether to leave or not. At the same time, numerous foreign non-financial corporations have also announced their withdrawal, which has an adverse effect on the customer base of the banks that opt to remain.

Distribution of foreign banks' exposures towards Russia by home country of the banks



Note: Based on data from banks reporting to the BIS. Source: BIS

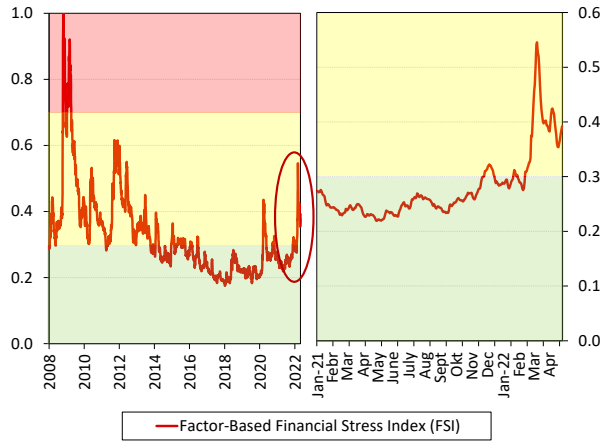
The Hungarian banking sector was affected by the war through the failure of Sberbank Europe AG as well. The Hungarian affiliate of Sberbank had been part of the domestic banking sector and operating in a stable manner for years; it found itself in a difficult situation because of the insolvency of the European regional centre of Sberbank. The Hungarian Sberbank was exposed to a one-off shock that hit both assets and liabilities at the same time, which undermined its solvency, and therefore the MNB withdrew its operating licence, and dissolution proceedings were launched against Sberbank. In line with its statutory obligation, depositors were indemnified by the Hungarian National Deposit Insurance Fund up to EUR 100,000 per client. Clients whose exposures exceed this threshold might receive further compensation from the amounts collected during the dissolution proceedings. The exit of the bank does not have any major impact on the functioning of the Hungarian banking sector. With its market share of a mere 1 per cent (relative to total assets), the Hungarian affiliate of Sberbank was not a significant player in the domestic banking sector. The insolvency of Sberbank Europe AG affected several affiliate banks as well in our region. The situation of the Slovenian and Croatian affiliate banks was solved by selling them rapidly. The Slovenian affiliate bank was bought up by the largest Slovenian banking group, Nova Ljubljanska Banka, in which the state also has a significant equity share, while the Croatian affiliate was acquired by Hrvatska poštanska banka, a medium-sized market participant with majority state ownership. However, the Czech and Hungarian affiliates suffered same fate.

2. Market and bank liquidity: ample liquidity, high resilience

The stress level of the financial system had risen considerably with the increase in geopolitical risks, then following some corrections, it stabilised at a somewhat higher level compared to that typical before the war. In view of the central bank's interest rate steps, short-term yields increased at an accelerating pace as the risks around the inflation outlook strengthened, while long-term yields were up in line with inflation and interest rate hike expectations, parallel to a deterioration in investor sentiment. The banking system's liquidity reserve expanded primarily as a result of government measures in the period under review, supported only slightly by the central bank's liquidity expanding programmes. The ample liquidity reserves provide strong protection against liquidity shocks even in spite of the increase in geopolitical risks, but the distribution of banking sector liquidity across individual institutions can change rapidly in a stress situation. Prior to the outbreak of the Russia–Ukraine conflict, the banking sector was characterised by financing that had a balanced structure, which provides an adequate background for mitigating financial stability risks.

2.1. Financial stress index and interbank yields both up

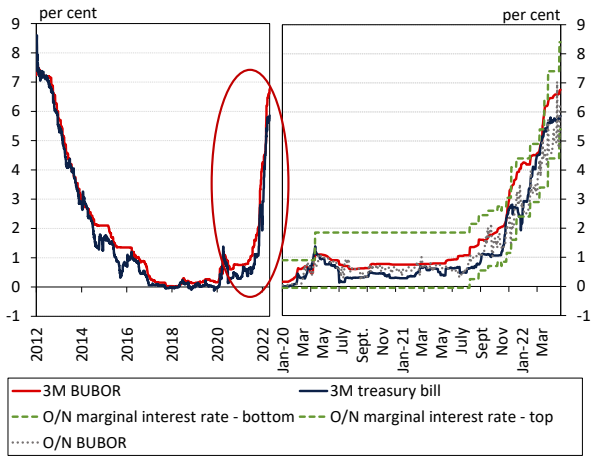
Chart 12: Development of the Factor-Based Financial Stress Index



Note: FSI values calculated based on estimated factors for 2005–2019, according to Szendrei, T. – Varga, K. (2017). The maximum FSI value is one. Low stress level in green bar, stress status in yellow bar, high critical stress level in red bar. Source: MNB

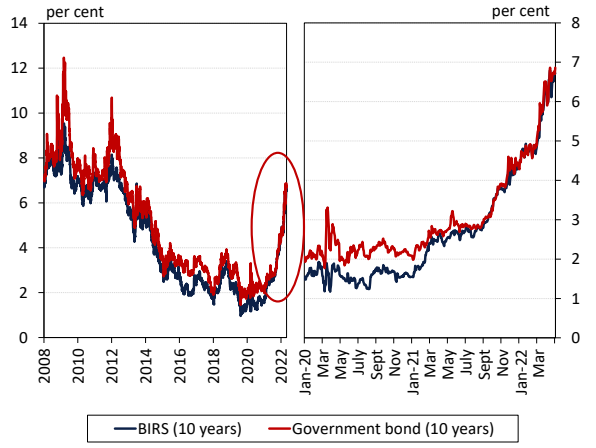
The stress level of the financial system rose considerably after the outbreak of the war. The factor based index of systemic stress (FISS) is a high-frequency stress indicator, which, examining the individual market segments of the financial system together, shows the current stress level of the financial system taking co-movements into account. In mid-March 2022 the value of the index had been around 0.54, which is very high, but not reaching the level that represents critical stress, then recently it declined significantly to close to 0.38 (Chart 12). The high values measured in March are essentially attributable to the elevated levels of all of its components together. Special attention should be given to the government securities market, where the yield of 5-year Hungarian government bonds increased considerably compared to that of the German government bonds. On the FX market, the stress level was raised by the high implied volatility of the HUF/EUR exchange rate and by the EUR bid–ask spread opening in the spot market. On the equity markets, the degree of cumulative losses is very high in the case of the domestic, regional and German markets as well, while the VDAX index, which depicts the future volatility of equity markets, is also high. Although the fall in the price of OTP shares is very significant in the bank segment, given the strong capital position of the bank it does not drastically increase the probability of default included in the model. It is also favourable that the indicator describing the turnover of the interbank market at system level also does not reveal problems with turnover or liquidity. At the same time, both the HUFONIA O/N rate and the

Chart 13: Developments in short-term yields



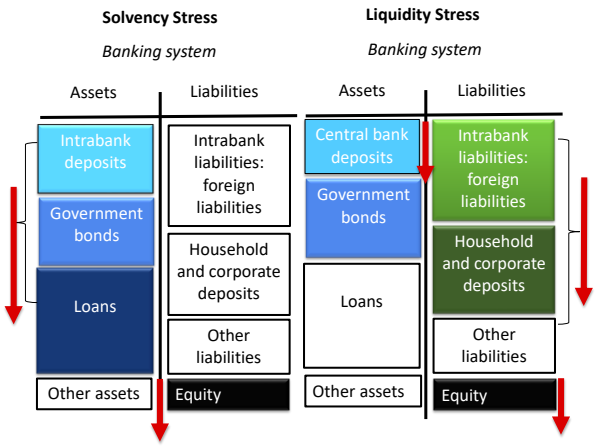
Source: Government Debt Management Agency, MNB

Chart 14: Changes in long-term interbank interest rate swaps and government bond reference yields



Source: Government Debt Management Agency, MNB

Chart 15: Simplified schematic diagram of potential shocks to the banking system with key bank balance sheet items



Source: MNB

HUFONIA turnover are at high levels, raising the level of the FISS.

The rise in short-term interest rates reflects central bank interest rate steps and interest rate hike expectations. In the interbank unsecured money market, transactions with a maturity of maximum one year closely followed the tightening of monetary conditions, and the 3-month BUBOR rose to 6.76 per cent at end-April 2022 (Chart 13). Between the beginning of the tightening cycle in June 2021 and the end of April 2022 the MNB raised the interest rates on the one-week deposit and the central bank base rate by 555 basis points and 450 basis points, respectively, and thus the former amounted to 6.45 per cent, while the latter was 5.4 per cent at end-April. In its announcement of April 2022 the Monetary Council emphasised that inflation risks warrant a further tightening of the monetary conditions, and the related expectations are also reflected in the levels of market interest rates.

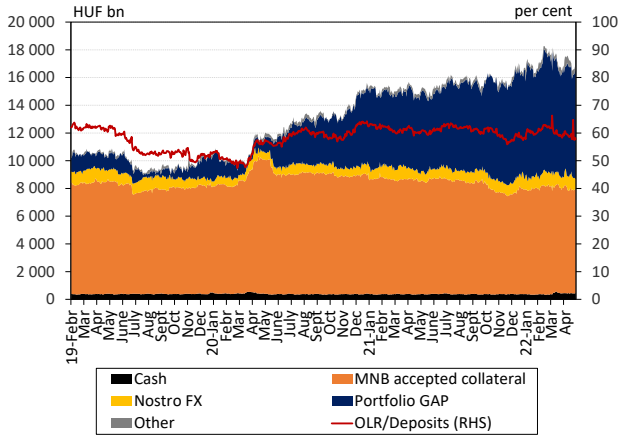
The rise in long-term yields has been in line with global trends. Hungarian long-term government securities market and interbank yields continued to rise in early 2022 (Chart 14). Similar developments took place in the long-term yields of countries' in the region as a result of strengthening inflationary processes. The central bank finished the phasing out of the crisis management programmes in December, and in line with that it did not purchase any more government securities in 2022 Q1. Since the beginning of the central bank's tightening cycle, 10-year interbank yields have increased by 402 basis points, while government securities yields with the same maturity rose by 403 basis points.

2.2. Banking sector resilient even amidst elevated risks

In case of financial stress, the banking sector can be hit by shocks from different directions, even simultaneously. The war between Russia and Ukraine pushed the stress level observed in the financial system up significantly, also increasing the volatility of banks' assets and liabilities. Shocks to banks are usually classified into two main groups: solvency stress and liquidity stress (Chart 15). The most important difference between the two stress situations is that while solvency stress stems from the depreciation of assets and entails a decline in capital, liquidity stress originates from excessive outflows of items on the liabilities' side. The main line of defence against solvency stress is constituted by adequate collaterals, prudent loan loss

provisioning and lending, while in a liquidity crisis it is provided by holdings of stable liabilities and liquid assets. The Hungarian banking sector's capital (see Chapter 6), liquidity and financing positions are stable in spite of the increased risks. The level of Russian and Ukrainian exposures at the banks operating in Hungary is manageable, and they represent a low risk at system level.

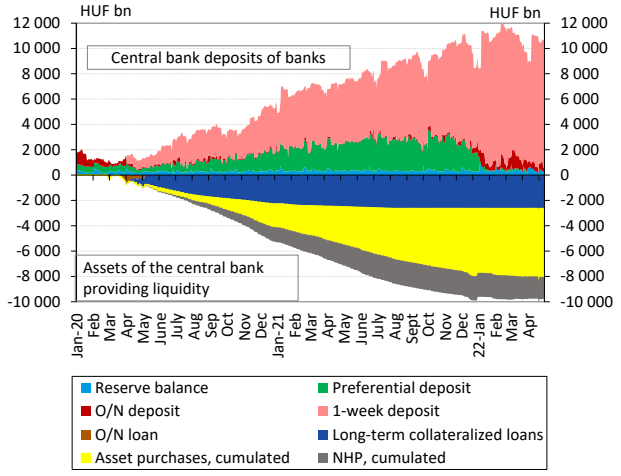
Chart 16: Decomposition and development of banks' operative liquidity reserves



Note: The portfolio gap denotes the contractual net flows of treasury operations within 30 days of the data reporting date 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, deviation from and changes in reserve requirements.
Source: MNB

Operational liquidity reserves of the banking sector have increased further, and provide strong protection against liquidity shocks. Operational liquidity reserves (OLR) of the banking sector have increased by some 12 per cent since end-October 2021, amounting to HUF 17,100 billion on average in April 2022 (Chart 16). In the period under review, the greatest expansion in the banking sector's OLR took place as a result of one-off subsidies to households. As a result of personal income tax refunds, soldiers' salaries and February pension transfers, which also included the 13th month pensions, OLR increased by some HUF 1200 billion between 4 February 2022 and 11 February 2022. Even in spite of the general uncertainty evolving as a result of the war between Russia and Ukraine, there was no outflow on the liability side of the Hungarian banking sector that could be considered significant at sector level. Nevertheless, the changing money market environment required some banks to conduct stricter liquidity management than usual. The increase in liquidity reserves is still fundamentally determined by the rise in contractual net flows of treasury operations (portfolio gap). The inflows of one-week and O/N deposits with the MNB account for a significant portion of this item.

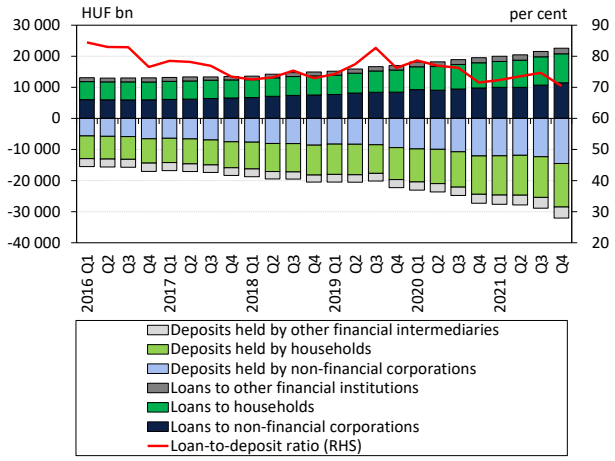
Chart 17: Developments of central bank deposits of banks, and central bank assets providing liquidity



Note: Asset purchases include: government bonds, mortgage bonds and the Bond Funding for Growth Scheme.
Source: MNB

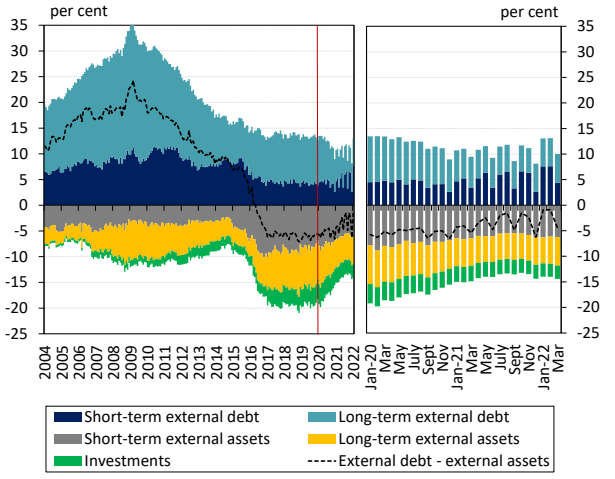
The banking sector's liquidity placed with the central bank has expanded, but its structure has changed. The banking sector's deposits with the central bank expanded further, amounting to some HUF 10,400 billion on average in April 2022 (Chart 17). In April, the amount of liquidity held in one-week deposits was HUF 9,600 billion on average, while the utilisation of the O/N deposit facility was up as a result of the increased unpredictability following the outbreak of the war between Russia and Ukraine. Following the end of the favourable, 4 per cent interest rate level and the rise in the O/N deposit rate, the utilisation of the preferential deposit facility declined considerably, and as of 1 April 2022 the facility was phased out in line with the Monetary Council's decision of 22 February. From its instruments contributing to the expansion in the banking sector's liquidity, with the Bond Funding for Growth Scheme, the Green Home Programme and green mortgage

Chart 18: Decomposition of loan-to-deposit ratio of credit institutions



Source: MNB

Chart 19: External assets and liabilities of the banking system relative to total assets



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

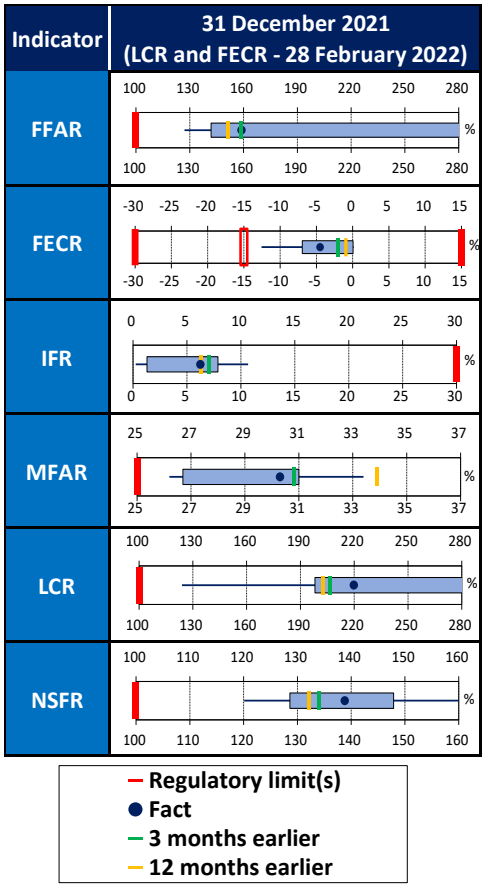
bond purchases the central bank contributed to the expansion in the banking sector's liquidity to a lesser degree only.

2.3. Financing situation of banking sector still favourable

The loan-to-deposit ratio has declined, its low level reflecting the favourable financing situation of the banking sector. Domestic sectors' loans outstanding increased by HUF 2124 billion in 2021 H2, while deposits expanded by HUF 4234 billion. As a result, the loan-to-deposit ratio, which captures financing risks, was 3 percentage points down during 2021 H2, amounting to 70.5 per cent at the end of the year (Chart 18). In the event of a liquidity shock, however, the fact that demand deposits account for some four fifths of all deposits may pose a financing risk to institutions. The stabilising role of the private sector's deposits in bank financing may only persist if the rise in interbank rates feeds through into deposit rates to a much greater degree than now (Box 2).

External liabilities of the banking sector have increased, but they are still in balance with the external assets. Compared to the end-September 2021 value, the ratio of external liabilities to total assets increased by nearly 1.4 percentage points to 10 per cent, while that of external assets expanded to a lesser degree, i.e. by 0.9 percentage points, amounting to 14.4 per cent at end-March 2022. As a result of the changes, at the end of the period under review the surplus of external assets compared to external liabilities declined to 4.4 percentage points as a proportion of total assets (Chart 19). External funds of the banking sector provided stable financing even amidst the increased geopolitical risks, while the potential liquidity risks posed by the external liabilities are mitigated by the balance between external assets and liabilities. In addition to external liabilities, external assets may also mean risks for the operation of banks if they do not have adequate coverage.

Chart 20: 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 rectangles indicate the lower and upper quartiles of the distribution, and the ends of the dark blue lines indicate the lower and upper deciles. For LCR, this excludes mortgage banks and housing savings banks. The NSFR entered into force on 28 June 2021, the first reported data is for 30 June 2021, earlier historical data is available as an estimate. From 9 December 2021, the FECR operates with an asymmetric limit, with more room for manoeuvre for banks operating with a foreign exchange surplus. In the MFAR, from 1 July 2021, green mortgage-based funds can be taken into account in the calculation of the indicator with a discounted weight (150 per cent). Source: MNB

The banking sector has ample liquidity reserves and the structure of financing is stable. Banks met the expected 100 per cent level of the EU's net stable financing ratio (NSFR), which entered into effect on 28 June 2021 requiring banks' long-term stable funding, with minimal fluctuations and buffers growing gradually at system level (Chart 20). The banking sector's on-balance-sheet FX liability surplus increased further in early 2022, but no major restructuring across the major items took place on the asset or liability sides.[2] The decline in sector-level dependence on riskier financial corporation funds continued in the last quarter of 2021 as well. Banks meet the mortgage funding adequacy ratio (MFAR) requirement with adequate buffers, which was also supported by the green mortgage bond issues given preferential treatment.[3] Four of the five Hungarian mortgage loan institutions have already entered the market with green mortgage bonds, at a value of some HUF 140 billion at sector level.

[2] The MNB revised its FECR regulation and decided on its asymmetrical easing as of 9 December 2021. Accordingly, in the case of an FX liability surplus the expected minimum value of the indicator declines from the previous -15 per cent to -30 per cent, while the 15 per cent limit valid in the case of an FX asset surplus has not changed.

[3] As of 1 July 2021, green mortgage-backed liabilities can be taken into account with a preferential (150 per cent) weighting upon calculating the MFAR.

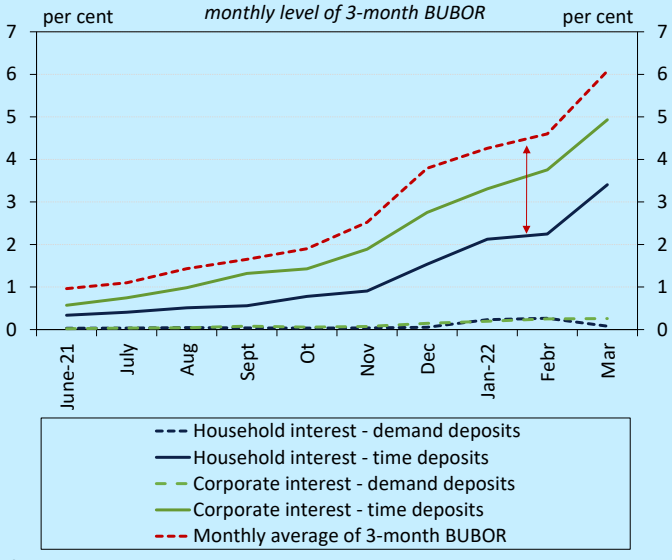
BOX 2: CHANGE IN BANK DEPOSIT INTEREST RATES SINCE START OF MONETARY POLICY TIGHTENING CYCLE

During the changes in monetary conditions the central bank monitors the impact of its interest rate decisions in every market segment, including in the case of banks' client deposits. Constituting the backbone of banks' funding, corporate and household deposits together account for nearly half of the balance sheet total of the banking sector. Consequently, their structure and pricing are crucial in terms of the functioning of banks. The change in the stance of monetary policy in the summer of 2021 has an impact on developments in banks' client deposits as well, which is also decisive in terms of bank profitability and funding as well as monetary transmission.

The repricing of deposits outstanding also needs to be examined in terms of the efficiency of interest rate transmission and the stability of the financial system. In terms of achieving the central bank's inflation target, a general feed-through of the rising interest rates to all market segments is desirable. By encouraging savings, rising yields on deposits are able to restrain aggregate demand, thus reducing inflation. The importance of repricing deposits in terms of central bank interest rate transmission is not negligible, even if deposits outstanding are not one of the most important savings tools for economic agents. The pricing of deposits also depends on factors related to the market and banks,[4] which jointly determine the degree and speed of repricing deposits outstanding. In terms of market-related factors, important roles are played by the competition among banks as well as clients' financial awareness and investment habits, which are market factors that have the same effect on every bank. In Hungary, there is still ample room for development in the areas of bank competition and financial awareness.[5] Looking at the bank factors, in addition to profitability as well as the liquidity and capital position, which is important in terms of the stability of funding, one-off management decisions may also be crucial. The variety of bank factors causes high pricing heterogeneity at individual banks, but at banking sector level a fast feed-through of interest rates results in a more competitive banking sector with a more stable financing structure.

As for corporate term deposits, rapid repricing is seen in the case of new deposits outstanding, while the average interest rate on demand deposits increased only slightly. Since the start of the interest rate hike cycle the contract amount-weighted annualised interest rate of new corporate forint term deposits has increased by 436 basis points, which is 76 basis points below the change in the BUBOR over the same period. By contrast, the average interest rate on corporate demand deposits was up by a mere 24 basis points in the period under review and amounted to 26 basis points in March 2022.

Development of the average annual interest rate on newly contracted household and corporate deposits and the average monthly level of 3-month BUBOR



Source: MNB

As for new term deposits, the repricing of household deposits is slower than that of corporate deposits, and falls significantly short of the rise in short-term interbank yields. Between June 2021 and March 2022, households' newly placed forint term deposits rose by only 307 basis points on average, falling far

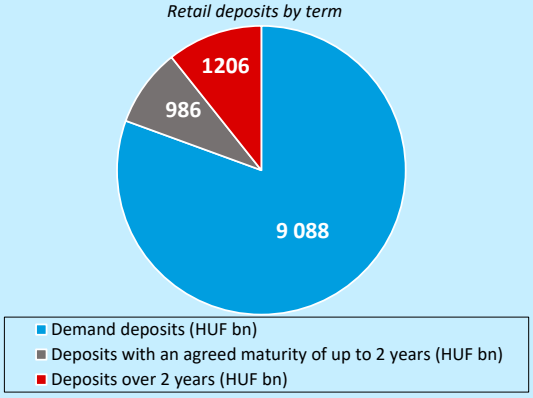
[4] Gropp et al (2007): The Dynamics of Bank Spreads and Financial Structure, ECB Working Paper No. 714: https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp714.pdf

[5] https://www.mnb.hu/letoltes/balint-mate-el-meouch-nedim-marton-krakovsy-stefan-eros-a-magyar-bankrendszer-de-milyen-aron.pdf

short of the change in the 3-month BUBOR. [6] The average interest rate on household demand deposits was up by 5 basis points in the period under review, amounting to 8 basis points in March 2022. In the period under review, the difference between the central bank base rate and the average interest rate on household term deposits is the greatest in Hungary among the countries of the region.

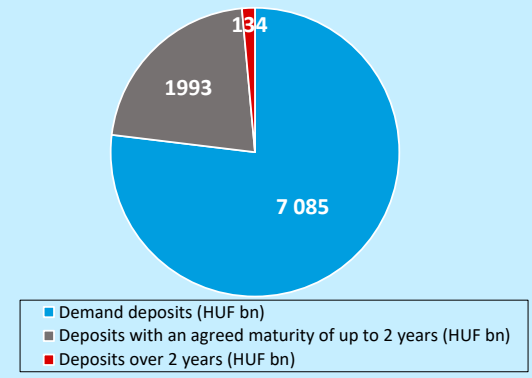
The structure of corporate and household deposits has remained stable since the beginning of the MNB's tightening cycle, and demand deposits continue to account for 80 per cent of all deposits. According to end-March 2022 data, 81 per cent of all household deposits and 77 per cent of corporate deposits are demand deposits. Compared to June 2021, the share of demand deposits within household deposits was up by 2.4 percentage points, while in the case of corporate deposits it declined by 6.7 per cent, which does not signify any significant restructuring in the case of companies or households. At present, the high ratio of demand deposits is a general phenomenon across the region as well, but by historical comparison, in the period between 2008 and 2012 the share of demand deposits was much lower in the Hungarian banking system, only one third of all deposits. The ratio of demand and term deposits is important in terms of bank profitability, while their role in bank financing is less crucial due to the fact that term deposits are easy to break.

Retail deposits by term



Source: MNB

Corporate deposits by term



Source: MNB

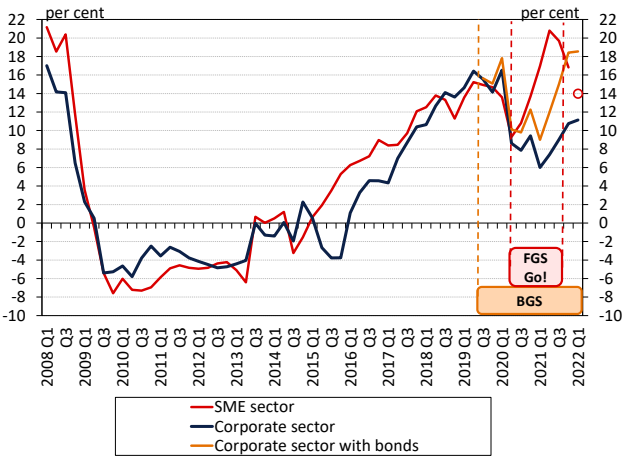
[6] However, the statistics on term deposits in the household sector are distorted by a composition effect, since it also includes data on term deposits of self-employed persons and non-profit institutions serving households in addition to natural persons. According to the MNB's internal statistics, the average interest rate on term deposits of natural persons increased significantly lower than the aggregate interest rate on household deposits in the period under review.

3. Corporate lending: strong expansion followed by uncertainty and deceleration

The expansion of the corporate loan portfolio is still outstanding by international comparison, with the growth of 10.7 per cent recorded in Q4 ranking as the third highest rate in the European Union. As result of subsidised credit schemes, SME dynamics reached 16.8 per cent at end-December 2021. Responses to the Lending Survey suggest there were no major changes in lending conditions in the first quarter of 2022, looking ahead, however, tightening is expected. The cyclical position of banking sector lending can be considered close to equilibrium. In 2021 H2, the volume of new contracts exceeded the value for the same period of the pre-pandemic year, i.e. 2019, by 37 per cent. The Bond Funding for Growth Scheme was a major contributor to the diversification of corporate funds. In February 2022, the sum of the funds obtained within the framework of the scheme reached 28 per cent of credit institutions' corporate loan portfolio. As a result of the interest rate hikes and the increasing share of market-based loans, average interest rates on SME project loans increased by 4.3 percentage points between June 2021 and February 2022. According to our forecast, corporate loan dynamics may temporarily slow down due to the uncertainty caused by the war between Russia and Ukraine as well as to the higher interest rate and inflation paths, but may rise again as of early 2023.

3.1. Corporate loan dynamics, still strong in early 2022, are expected to decelerate

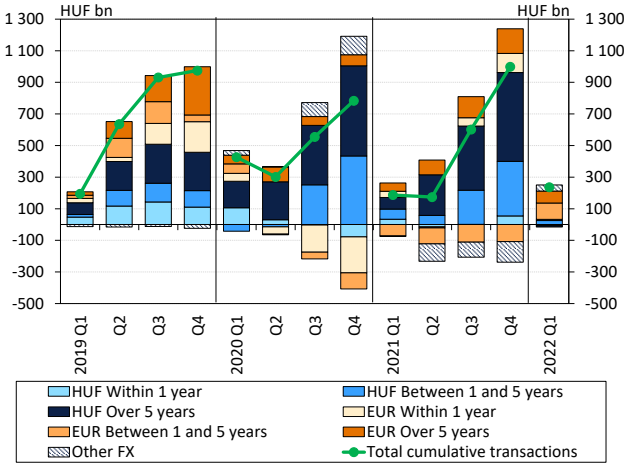
Chart 21: Annual growth rate of overall corporate and SME sector loans outstanding, as well as annual growth rate supplemented with bonds in the credit institution sector



Note: Transaction based, prior to 2015 Q4, data for SMEs are estimated based on banking system data. Supplemented growth rate with bonds calculated only with bond stocks held by credit institutions.
Source: MNB

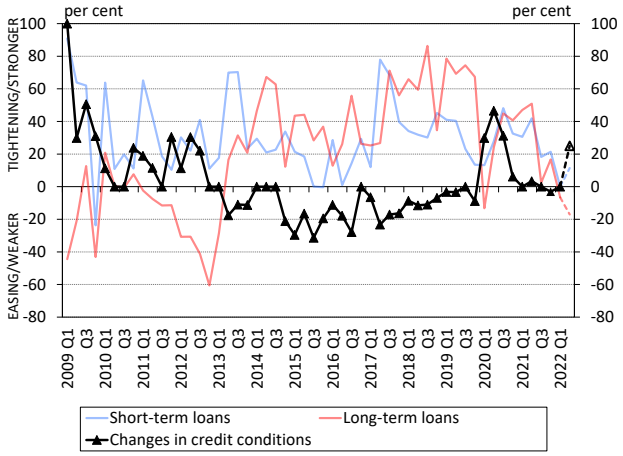
Corporate loans and bonds outstanding expanded strongly in 2021. In Q4, the annual growth rate of the loan portfolio of the total corporate sector accelerated to 10.7 per cent (Chart 21), which is the third highest within the European Union, exceeding the averages of the euro area and the Visegrád countries by 7 percentage points and almost 5 percentage points, respectively. Also taking into account the transactions of corporate bonds owned by banks, considerable growth of 18.4 per cent was seen in December, largely as a result of the closing Bond Funding for Growth Scheme (BGS). The dynamics of the SME segment's loan portfolio decelerated only slightly even following the depletion of the FGS allocation, and amounted to 16.8 per cent year on year at the end of 2021 H2. In the large corporations segment, the decline in the loan portfolio observed in the previous quarters reversed by the end of the year, and 4 per cent expansion was already seen in Q4. Examining large companies' loan dynamics together with bond market liabilities, the portfolio expansion observed during 2021 was similar to that of the SME segment in terms of degree, but it was more diversified. At the end of the first quarter of 2022, the annual growth rate of the loan portfolio was 11 per cent for the entire corporate segment, and 14 per cent for the SME segment, according to preliminary data.

Chart 22: Transactional expansion of the corporate loans outstanding by maturity and denomination



Source: MNB

Chart 23: Changes in credit conditions and credit demand in the corporate segment



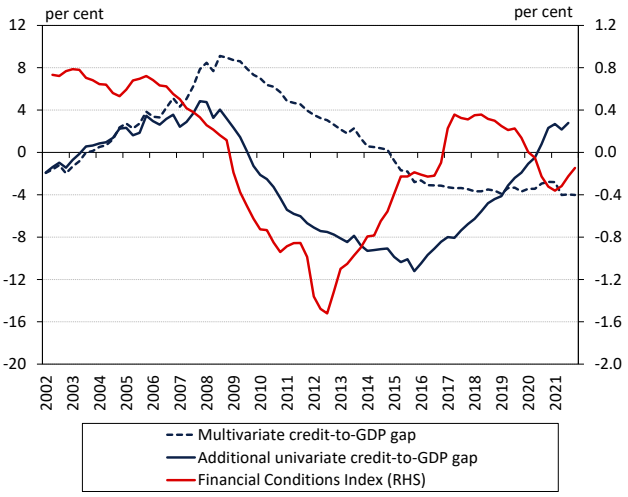
Note: Net ratio is the difference between tightening and easing banks, and banks indicating stronger and weaker demand, weighted by market share. Source: MNB, based on banks' responses

Long-term forint loans continued to gain ground in 2021 H2. In 2021 there was significant growth in loans outstanding, reaching HUF 1000 billion on a transaction basis and exceeding the value for 2020 by 28 per cent. The expansion in the loan portfolio is highly concentrated: more than 80 per cent of the growth took place in H2, with major support from high-volume transactions as well. Although loans outstanding in all sectors increased in 2021 on a transaction basis, only three sectors (trade and vehicle repair activities, real estate activities as well as financial service activities[8]) accounted for nearly 75 per cent of the expansion. Growth was made dynamic mostly by the market of forint loans over 1 year; this portfolio expanded by HUF 908 billion (Chart 22). In 2022 Q1, however, only foreign currency loans boosted the growth: the transactional expansion of forint loans amounted to HUF 13 billion, while that of foreign currency loans amounted to HUF 226 billion.

The Russia-Ukraine war and the already announced sanctions are affecting the trends in corporate lending through a number of channels. To map the effects of the Russia-Ukraine war on lending, we sent questionnaires to the large Hungarian banks. Due to the energy price shock related to the war, Hungarian banks closely monitor companies that are linked in some way to the commodities affected by the significant price rise and are sensitive to the price changes of these commodities. On the whole, no bank has experienced any drop in credit demand for the time being, but they reported a major rearrangement: while the demand for working capital loans may increase, the demand for investment loans may decline. Looking ahead, each respondent expects a further decrease in demand for investment loans, which is only partly offset by the rise in the demand for working capital financing, while in the opinion of several respondents, foreign currency loans may gain ground in view of the increase in forint interest rates. This is largely the same as the responses to the Lending Survey conducted after the war conflict; participating banks have already seen a decline in demand for long-term loans as early as the first quarter (Chart 23), and expect a future decline too. In the first quarter, banks did not make any substantial changes to their lending conditions, but looking ahead, 25 per cent of them plan to tighten.

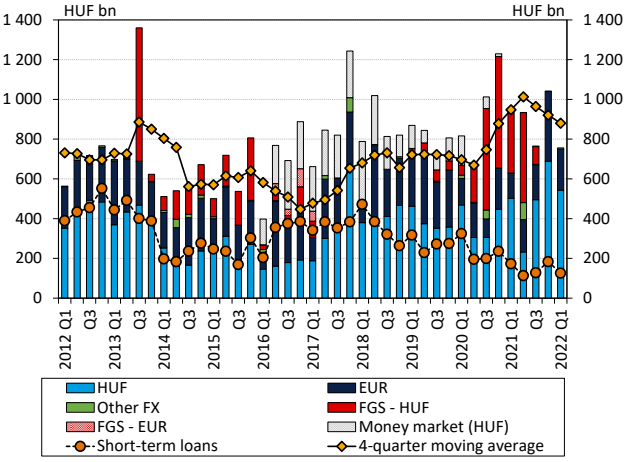
[8] Within the sector of non-financial corporations, the financial services subsector mostly comprises holding companies.

Chart 24: Credit gaps as a percentage of GDP and the Financial Conditions Index in the corporate sector



Note: Credit gaps calculated on the basis of the loans outstanding disbursed by the entire financial intermediary system.[7] At each point in time the FCI value is the divergence from the historical average measured in the standard deviation of the FCI. Detailed methodology: Hosszú, Zs. (2016): The impact of credit supply shocks and a new FCI based on a FAVAR approach, MNB Working Papers 2016/1, Magyar Nemzeti Bank.
Source: MNB

Chart 25: New corporate loans in the credit institutions sector



Source: MNB

Based on the position of the corporate lending cycle, the banking sector was in a close-to-equilibrium situation when the Russia-Ukraine war broke out. The additional univariate credit gap was in slightly positive territory, while the multivariate credit gap was in slightly negative territory in the corporate sector in 2021 Q3, and thus the cyclical position of corporate lending was close to equilibrium, while the credit-to-GDP ratio was around its long-term trend (Chart 24). In 2021 Q3, the level of the corporate loan portfolio as a percentage of GDP corresponded to 21.2 per cent (falling considerably short of the around 36 per cent figure for the euro area), although in the longer term it may increase, parallel to the financial deepening. The Financial Conditions Index rose slightly at the end of 2021; in spite of the uncertain environment, the Hungarian banking sector continues to be only moderately contractionary and risk-averse.

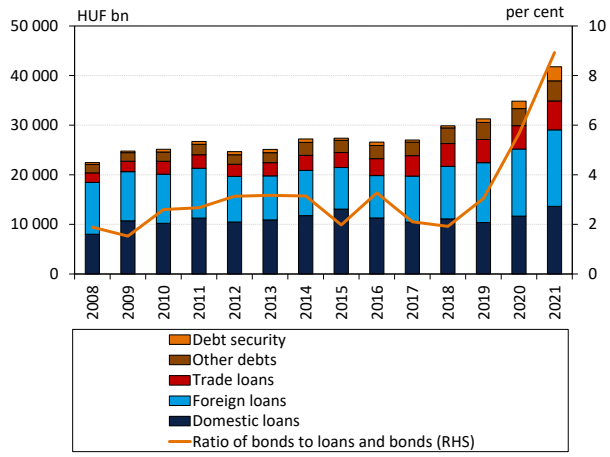
The new contracts in 2021 H2 are much higher than the pre-pandemic level. In spite of the tightening subsidised credit schemes, the volume of concluded contracts remained significant in 2021 H2 as well. New loans were disbursed totalling HUF 1830 billion, falling 16 per cent short of the 2020 level, but exceeding the figure for 2019 by 37 per cent (Chart 25). 38 per cent of the new contracts were related to large corporations in 2021 H2; new contracts in this segment exceeded the level of two years before by 54 per cent. In parallel with the phasing out of FGS Go!, the share of market-based loans[9] within new disbursements increased significantly, reaching 77 per cent in 2022 Q1, which is only slightly below the 85–90 per cent observed prior to the pandemic.

The portfolio of bonds issued by companies has increased nearly seven times since the launching of the Bond Funding for Growth Scheme. The development of the corporate bond market and increasing its liquidity were among the priority goals of the Bond Funding for Growth Scheme, which was launched in July 2019. In 2019 Q2, prior to the start of the scheme, the share of debt securities within all corporate loans and bonds outstanding was 1.8 per cent, but in December 2021 it already reached 8.9 per cent (Chart 26). As a result, domestic corporate bonds outstanding rose nearly seven-fold: while in 2019 Q2 the level of the bond market as a percentage of GDP reached 0.9 per cent,

[7] For the additional univariate credit gap, see the MNB's methodological description; in the case of multivariate: Hosszú, Zs. – Körmendi, Gy. – Mérő, B. (2015): Univariate and multivariate filters to measure the credit gap, MNB Occasional Papers 118.

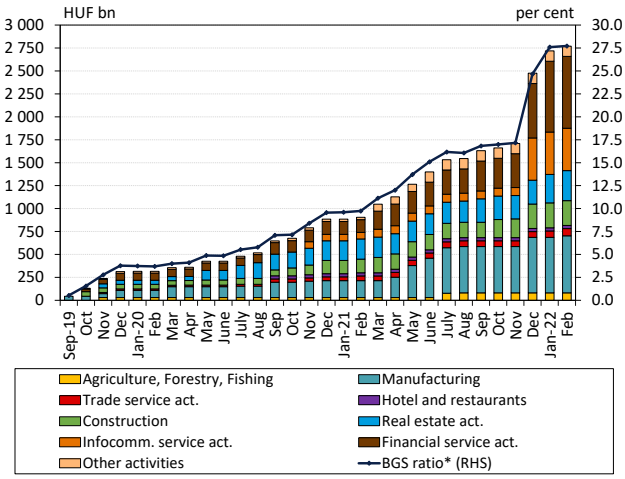
[9] When calculating the share of market-based loans, within credit institutions' contracts excluding the Hungarian Development Bank and Eximbank we examine the ratio of non-overdraft loans classified into the 'normal market' category in banks' data reporting.

Chart 26: Composition of corporate liabilities and the share of bonds



Note: Consolidated data. Source: MNB

Chart 27: Cumulated amount of issued bonds under BGS by sector



Note: BGS ratio*: The ratio of the Bond Funding for Growth Scheme to the banks' corporate loans outstanding. Cumulated data. The financial service sector consists predominantly of holding companies. Source: MNB

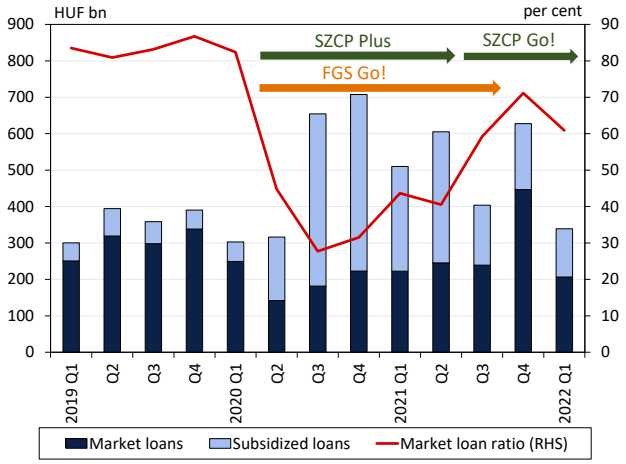
i.e. the lowest across the Visegrád countries, in 2021 Q4 it was already the highest, corresponding to 5.4 per cent.

The value of the bonds issued within the framework of the Bond Funding for Growth Scheme exceeded one quarter of credit institutions' corporate loan portfolio. Between July 2019 and February 2022, 112 bond series of 87 companies were issued within the Bond Funding for Growth Scheme with a total value of nearly HUF 2782 billion. With this, the BGS significantly contributed to the diversification of corporates' funds, which was one of its basic goals: by February 2022 the amount of funds obtained under BGS exceeded one quarter of corporate loans outstanding (Chart 27). The scheme, which reached a wide range of sectors, meant significant additional financing for undertakings. In the case of companies where outstanding loans declined in the month of the auction or in the month thereafter, the decrease in loans as a percentage of bonds issued amounted to 20 per cent, indicating a low level of loan refinancing.

The share of market-based loans within new SME loans increased considerably following the depletion of the FGS Go! allocation. During 2021, SME loan disbursements amounted to a total of HUF 2417 billion, which is slightly – by 15 per cent – below the year 2020, when subsidised schemes were on the up, although it exceeds the value for the same period of 2019 by 43 per cent (Chart 28). In a breakdown by denomination, the trend seen in 2020 continued: forint loans still accounted for nearly 80 per cent of the new disbursements last year. The share of market-based loans increased significantly in 2021 H2: while their ratio was around 40 per cent of new loans in H1, they amounted to 71 per cent in Q4, approximating the 82 per cent recorded in the quarter preceding the outbreak of the pandemic. Excluding overdrafts, the contracts concluded under the Széchenyi Card Programme Go! (SZKP Go!), which is the most significant subsidised programme, amounted to HUF 104 billion in 2022 Q1, and thus the share of market-based loans within the contracts concluded in one month was around 61 per cent.[10] As of 30 June, several subsidised credit schemes available for the SME sector (SZKP Go!, MFB Economy Recovery Loan Programme, EXIM SME Spin Up) will be due to close or extension in a modified version, which may lead to a decline in the volume of disbursements and a further increase in the share of market-based loans. However, the Garantiqa Crisis

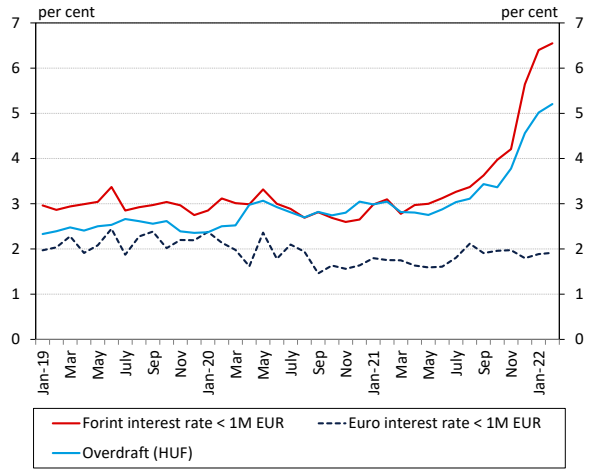
[10] The monthly contract value of the Széchenyi Card Programme does not contain the volume of the SZKP Overdraft Go because the overdrafts are not included in the total monthly volume of contracts either.

Chart 28: Newly disbursed SME loans broken down into market-based and subsidised categories



Note: Non-overdraft products. Credit institutions' contracts without Hungarian Development Bank and Eximbank. Source: MNB

Chart 29: Interest rates on new corporate loans



Note: Loans with variable interest rate or with up to 1-year rate fixation. Source: MNB

Guarantee Programme, which is the most important of the guarantee programmes, can support SME's borrowing throughout 2022. Guarantee contracts amounting to more than HUF 2000 billion have been concluded under this programme since its launch in June 2020, thus nearly 30 per cent of new contracting was related to the programme.

3.2. Lending rates growing with the increasing interest rates and the phasing out of subsidised schemes

The average interest rate on variable-rate corporate forint loans followed the rise in the reference rate. In parallel with the interest rate hike cycle that started in June 2021, the monthly average of the 3-month BUBOR rose by a total 3.6 percentage points until February 2022. Since the start of the tightening cycle, the volume-weighted interest rate level – excluding money market transactions[11] – of forint loans below one million euros with variable rate or with up to one year initial rate fixation increased by 3.4 percentage points to 6.6 per cent by end-February 2022 (Chart 29). Thus the repricing that took place was in line with the change in the reference rate. For loans over one million euros, over the same period nearly 90 per cent of the change in the 3-month BUBOR, i.e. a 3.2 percentage point increase, was observed in the interest rates. In the period under review there was a modest 0.3 percentage point rise in the interest rates on low-amount, variable-rate euro loans, while the interest rates on high-amount euro loans declined by 0.4 percentage points. The shifts observed in the case of euro loans are attributable to the changes in spreads, while the reference rate remained practically unchanged.

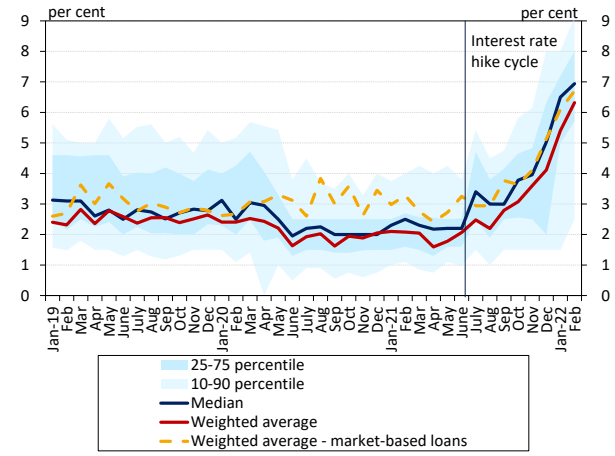
Interest rates on SME forint loans were up in parallel with the rising interest rate environment, the increase in the share of market-based loans and the phasing out of FGS Go!. Between the start of the interest rate hike cycle in June 2021 and February 2022, the contract amount-weighted average interest rate[12] on SME forint working capital loans[13] rose by 3.9 percentage points. The reason for the change, which exceeds the rise in the 3-month BUBOR, is the lower June 2021 base evolving as a result of the favourable, maximum 2.5 per cent transaction interest

[11] Money market transactions are loans with a value of over EUR 1 million extended to non-financial corporations; they have short terms (typically less than 1 month) and fund some kind of financial operation.

[12] Working capital loans: factoring transaction loans and credit lines, working capital loans and credit lines.

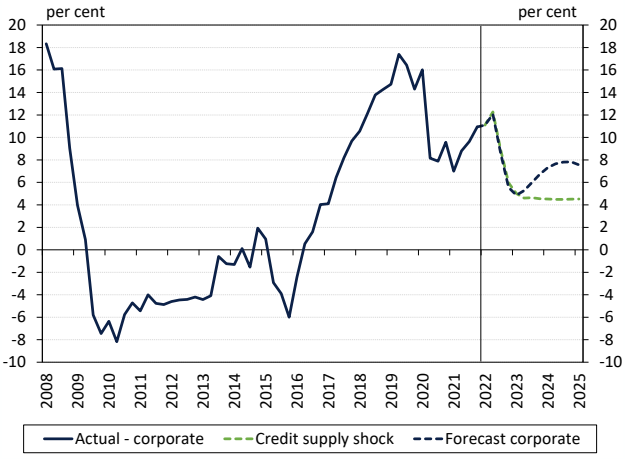
[13] Upon examining the financing costs of the SME sector, the products of the Széchenyi Card Programme as well as the loan contracts exceeding HUF 3 billion and typical of larger companies were excluded. The reason for this is that the total transaction interest rate, which serves as the basis for the data reported by banks and which contains the state subsidy as well, is much higher than the interest actually payable by the client.

Chart 30: Average interest rate on new forint investment loans and their distribution in the SME segment



Note: Weighted average interest rates. From the contracts reported as SME loans in the data reporting by credit institutions, only loans with a contract amount below HUF 3 billion were taken into account. Data net of Széchenyi Card Programme transactions. Source: MNB

Chart 31: Forecast for annual growth rate of corporate loan portfolio



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

rates of FGS Go!. Excluding all the subsidised schemes, and examining the market-based loans that capture the efficiency of the interest rate transmission best, over the same period the weighted average interest rate on working capital loans increased by 3.3 percentage points to 5.8 per cent. The development of the credit channel of the interest rate transmission is comprehensively explained in Box 3. The contract amount-weighted average interest rate on investment loans[14] rose by 4.3 percentage points between June 2021 and February 2022 (Chart 30). After increasing by 3.5 percentage points, the interest rate on market-based investment loans stood at 6.7 per cent at end-February, and thus the repricing that took place essentially corresponded to the rise in the 3-month BUBOR.

The Russia-Ukraine war considerably increased the uncertainty of our forecast concerning changes in loans outstanding. As a result of the increase in energy and commodity prices, companies' demand for working capital loans may increase, and the closing of subsidised credit schemes in the summer of 2022 may also bring forward demand in the credit market. On the whole, the interest rate and inflation paths, which are higher in view of the changed real economy situation, may curb the growth dynamics of the corporate loan portfolio. An increase of 6 per cent is expected in 2022 as a whole, followed by an 8 per cent expansion at the end of the three-year forecast horizon (Chart 31). Lending capacities are expected to remain easily sufficient even after the economic effects of the conflict, which are difficult to forecast for the time being, as the exposures of the Hungarian banking sector in Russia and Ukraine do not significantly jeopardise the capital and liquidity positions of the sector. Due to the high uncertainty we examined how Hungarian corporate loan dynamics would change in the case of a protracted war: at end-2022 a growth rate of 3–4 per cent would be achieved even if there was a fall in project loans or in the credit supply of the banks that have major exposures in Russia and Ukraine.

[14] Investment loans: investment loans and credit lines, project loans and credit lines, with the exclusion of leasing transactions. Loans with a purpose that cannot be identified as a project or working capital loan were not classified into any of the categories.

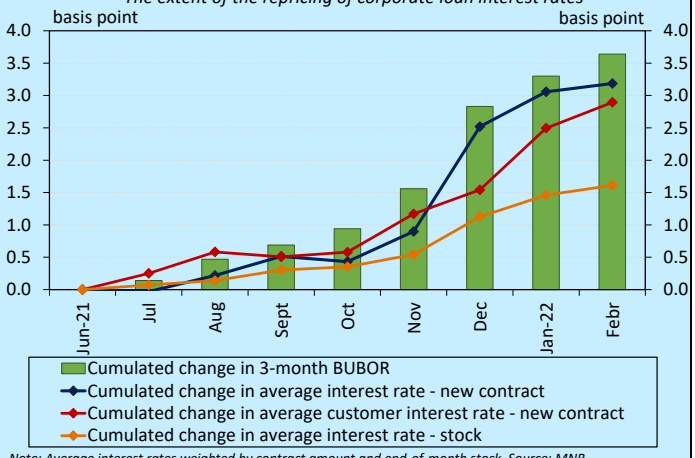
BOX 3: CHANGES IN LENDING RATES SINCE THE START OF THE INTEREST RATE HIKE CYCLE – EXAMINATION OF INTEREST RATE TRANSMISSION EFFICIENCY

One important channel of the transmission mechanism of monetary policy is the interest rate transmission, i.e. the appearance of the changes in the policy rate in money market as well as lending and deposit rates. In terms of the efficiency of interest rate transmission it is crucial how rapidly interest rate hikes appear in the lending rates, though this is affected by various factors. While regarding the loans outstanding the contractual terms and conditions concerning the method of interest bearing clearly determine the transmission, in respect of new loans banks' business decisions also play an important role.

In general, the share of loans with interest rates fixed for a longer period has increased significantly within bank loans in the past years, which also affects the mode of transmission. A higher ratio of fixed-rate loan products results in a slower feed-through of the interest rates in the case of loans outstanding and new loans alike. The significance of expectations also increases in parallel with the greater share of products whose interest rate is fixed for a longer time. Namely, long-term yields, which really influence the costs of funds for these loans, are affected not only by the current value of the policy rate but also by its expected path. This box presents the changes in the average interest rates on the individual types of loans since June 2021, in each case compared to the change in the 3-month BUBOR, which interbank rate reflects the change in the central bank base rate well.

The interest rates on new corporate loans tracked the rise in short-term interbank rates. The interest rates on variable-rate investment loans are typically tied to the 3-month BUBOR, whose monthly average was 364 percentage points up between June 2021 and February 2022. From the start of the interest rate hike cycle until February 2022 the contract amount-weighted average interest rate on new variable-rate corporate forint loans below EUR 1 million with up to one year rate fixation increased to a similar extent, by 343 basis points. During the same period, 87 per cent of the rise in the 3-month BUBOR appeared in the average interest rate on the total new forint loans portfolio, also including contracts with interest rate fixation over one year.

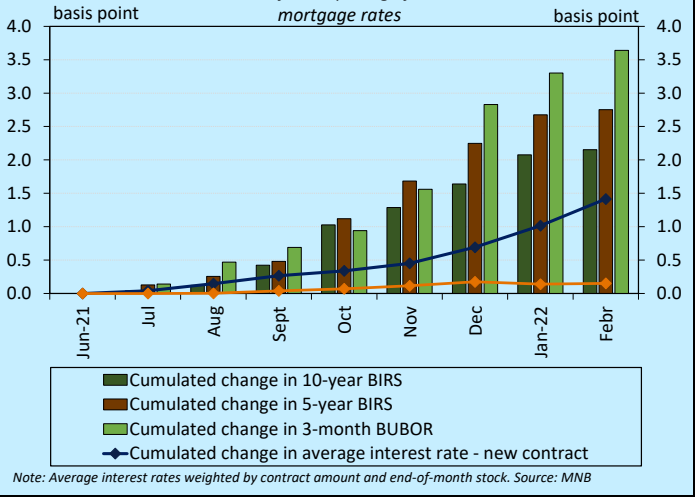
The extent of the repricing of corporate loan interest rates



Note: Average interest rates weighted by contract amount and end-of-month stock. Source: MNB

Lower and slower repricing is being observed in the case of new household loans. Excluding the contracts under the FGS Green Home Programme, between June 2021 and February 2022 the contract amount-weighted annualised interest rate on new forint-denominated housing loans rose by a total 142 basis points, and thus a mere 39 per cent of the change in the 3-month BUBOR appeared in the lending rates. The main reason for the low repricing is that new housing loan contracts are typically issued with initial rate fixation over one year, and the adjustment of the interest rate conditions of these

The extent of the repricing of household mortgage rates



Note: Average interest rates weighted by contract amount and end-of-month stock. Source: MNB

contracts is usually slower.[15] The more moderate feed-through measured on the basis of aggregate interest rate statistics is partly explained by a technical effect as well: namely, the interest rates shown in the statistics contain the average interest rates on the mortgage loans *contracted* by the banks in the given month, while even a significant time may elapse between the *receipt of the loan application* and the actual signing of the contract, thus delaying the degree of adjustment appearing in the interest rates. This is also corroborated by the fact that compared to the previous months the interest rate transmission of housing loans accelerated as of December 2021, and nearly 70 per cent of the total repricing took place during these three months.

Only smaller repricing was observed in the case of new forint-denominated personal loans as well. The contract amount-weighted annualised interest rate on personal loans increased only slightly over the time horizon under review, and thus 21 per cent of the change in the BUBOR appeared in the interest rates. This may also have been attributable to the competition among banks, which intensified due to the certified consumer friendly personal loans, and with conditions being easier to compare this may have dampened banks' aspirations to raise interest rates.

Interest rate hikes appear in the interest rates on loans outstanding only gradually and with a delay, which is attributable to the steadily declining share of the variable-rate loan portfolio. The annualised interest rate weighted by end-of-month stock on corporate forint loans outstanding rose by 160 basis points between the start of the interest rate hike cycle and February 2022, whereas in terms of company size, 61 per cent and 37 per cent of the change in the 3-month BUBOR appeared in the case of large corporation and SME loans outstanding. The reason for the lower feed-through compared to new disbursements is the high share of loans with interest rates fixed for more than a year. This share evolved as a result of the FGS, and corresponds to 47 per cent of corporate loans outstanding. In the household segment, the annualised interest rate weighted by end-of-month stock on forint-denominated housing loans outstanding was increased by a total 15 basis points in the period under review. Firstly, the reason for the low increase is that the share of variable-rate loans with an interest rate period up to one year was relatively low (24 per cent) upon the start of the tightening cycle, and secondly, within the latter, 37 per cent of the loans had interest rate periods that were longer than three months (typically 6 or 12 months), and thus the increase in interbank rates feeds through into the portfolio only gradually and with a delay. In addition, the degree of the feed-through is further reduced by the interest rate stop introduced in January 2022.

Accordingly, on the whole, in the case of corporate loans the interest rate channel of monetary transmission works with a slight delay, and the change in the 3-month BUBOR so far during the interest rate hike cycle has appeared almost completely in the interest rates, which is significantly facilitated by the higher share of variable-rate loans and the gradually growing share of market-based loans. By contrast, central bank interest rate hikes are reflected in the household segment only partially and with a major delay.

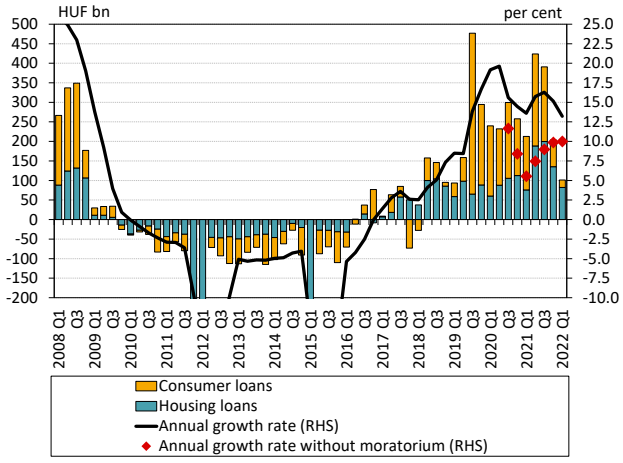
[15] Hajnal, G. – Lados, Cs. (2022): Time series analysis of the repricing practice of newly disbursed housing loans. Manuscript.

4. Household lending: increasing tightness in new loans, interest rate risk in the loan portfolio

Household loans outstanding continue to expand strongly, while the volume of new contracts returned to pre-pandemic levels. Nevertheless, the structure of the new volume is different from the pre-pandemic period: while the volume of housing loan contracts rose to a historical high in view of the family support and home subsidy measures, unsecured lending – the disbursement of prenatal baby support and personal loans – stabilised at a lower level compared to before the pandemic. At the same time, the partial phasing out of the home subsidy measures and the economic effects of the Russia–Ukraine war may result in a major slowdown in lending. In line with the buoyant housing market an increase in contract amounts is seen, which is even more significant in the case of clients who conclude several loan contracts simultaneously. In parallel with that, the ratio of transactions that result in higher payment-to-income ratios also shows an increasing trend. In the case of variable-rate mortgage loans, lending rates may increase significantly from July 2022, following the expiry of the interest rate stop measure of the government, but on the whole, at system level this is a manageable risk due the advanced amortisation, the close maturities and the loan-to-value ratio, which is low on average. Debtors can protect themselves from further rises in interest rates by switching to fixed-rate loans.

4.1. Dynamic credit outflow while housing loans dominate

Chart 32: Household loan transactions of credit institutions

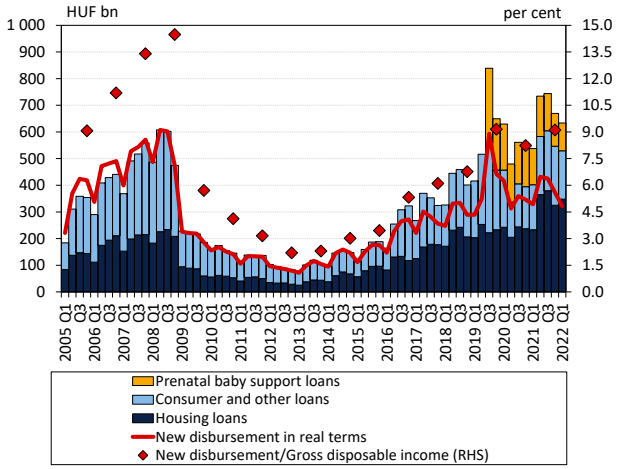


Source: MNB

Household loans outstanding expanded by 15 per cent in 2021. In 2021, household loans outstanding expanded by 15 per cent, i.e. by HUF 1231 billion as a result of disbursements and repayments, and thus the portfolio amounted to HUF 9327 billion in December (Chart 32). The loan dynamics, outstanding by international comparison as well, are partly explained by the repayment-curbing effect of the payment moratorium that was in effect for most of the year, but even excluding this effect we estimate that 10 per cent annual growth would have been reached. The moratorium has given only moderate support to the expansion in loans outstanding since November, as only 6 per cent of household loans outstanding continue to participate in the programme. Housing loans account for nearly half of the annual expansion in loans outstanding, while prenatal baby support loans already amount to 17 per cent of household loans outstanding. In 2022 Q1, a more modest transaction expansion of HUF 101 billion took place, bringing the annual loan dynamics to 13 per cent by March.

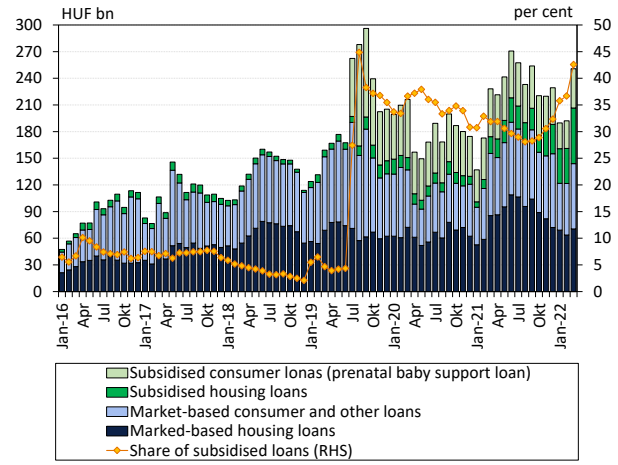
In 2021, the disbursement of retail loans reached a new record, but in real terms it is still below the levels typical before the 2008 crisis. During 2021, banks concluded loan contracts amounting to HUF 2686 billion with retail customers, exceeding the 2020 disbursement by 21 per cent and the level of the year preceding the appearance of the pandemic by 11 per cent. At the same time, major changes are observed in the structure of disbursement:

Chart 33: New household loans in the credit institution sector



Note: Excluding FGS loans and early repayments. 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. To calculate the indicator for 2021, the income data is an estimate. Source: HCSO, MNB

Chart 34: Subsidised and total lending in the retail segment



Source: MNB

the share of mortgage loans was up, while that of unsecured consumer loans declined within new contracts. Housing loans, which account for nearly half of the disbursed volume, expanded by 40 per cent in annual terms, which was largely attributable to the new home subsidies available from 2021,[16] and also to the continued rise in real estate prices and the demand brought forward as a result of the interest rate hike. The HUF 348 billion contract value of housing loans in 2022 Q1 was 49 per cent higher than a year earlier, which was also supported by the strong demand for the FGS Green Home Programme. Although since the introduction of the prenatal baby support loans, new contracts concluded by households have reached the levels seen before the 2008 crisis, in real terms [17]and as a percentage of households' disposable income they still fall short of 2008 (Chart 33).

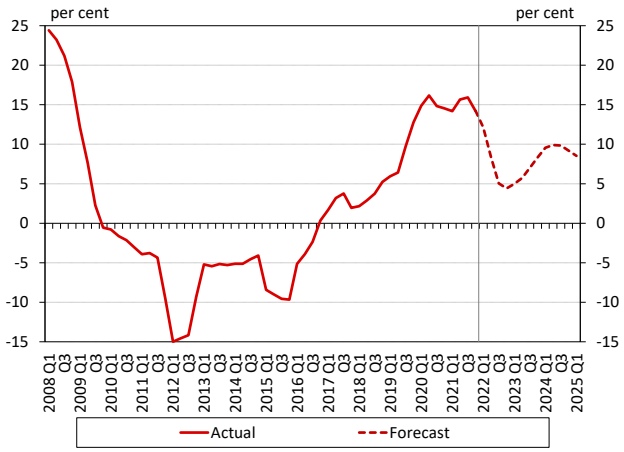
The share of subsidised loans within new disbursements increased considerably with the contribution of the FGS Green Home Programme. The new home subsidies introduced as of 2021 resulted in a record annual disbursement volume in the household segment. While one in every three household loans was subsidised in early 2021, their ratio declined slightly by the middle of the year. This may have been attributable to the subsidies' additional, demand increasing effect on market-based loans as well as to the lower disbursement of prenatal baby support loans. At the same time, the FGS Green Home Programme (FGS GHP), which has been available since October, has an additional demand-increasing effect in view of the loan amount of up to HUF 70 million, the favourable interest rate fixed until the end of maturity and the wider availability in terms of household structure, as a result of which the subsidised loans already account for 43 per cent of new disbursements in March 2022 (Chart 34). Thanks to the product, the disbursement of subsidised housing loans increased by about 90 per cent compared to the end of 2021.

Household loan dynamics may decline to single digits in the short term. In 2021, household loans outstanding throughout the entire financial intermediary system expanded by 14.2 per cent year on year, supported significantly by the buoyant demand for the new home subsidies as well as by the technical effect of the payment

[16] The reduction of VAT to 5 per cent for new homes, VAT exemption on new properties purchased using the Home Purchase Subsidy Scheme for Families (HPS), exemption from duty for homes purchased using the HPS, multigenerational HPS, home renovation subsidy, subsidised housing loan for home renovation, FGS Green Home Programme.

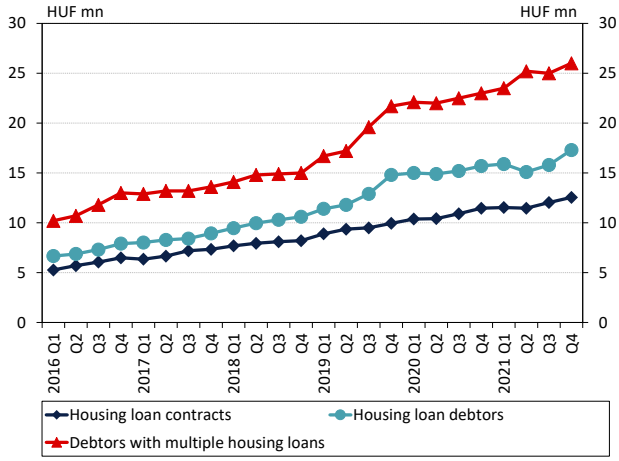
[17] Housing loans and consumer loans are deflated by the MNB house price index and the consumer price index, respectively.

Chart 35: Household lending forecast



Note: Transaction-based annual growth rate. Source: MNB

Chart 36: Average contract size of new housing loans and their debtors



Note: Housing loan debtors: average of the sum of the housing loan(s) taken out by a debtor at the same time, with prenatal baby support loan and personal loan taken out as downpayment. Debtors with multiple housing loans: average of the sum of more than one housing loan taken out by a debtor at the same time, with prenatal baby support loan and personal loan taken out as downpayment. Source: MNB

moratorium. Given the phasing out of certain home subsidies and family support programmes in 2022 according to plans currently in force[18] and the rise in lending interest rates as a result of tightening monetary policy, household loan dynamics may decrease to close to 4 per cent in the next one and a half years. Nevertheless, even nearly double-digit growth may be achieved as of 2023 H2 as a result of the rising dynamics of GDP growth (Chart 35). Household dynamics may decline because of a possible intensification of the sanctions policy against Russia and its economic effects, or increase due to a possible extension of the family support programmes.

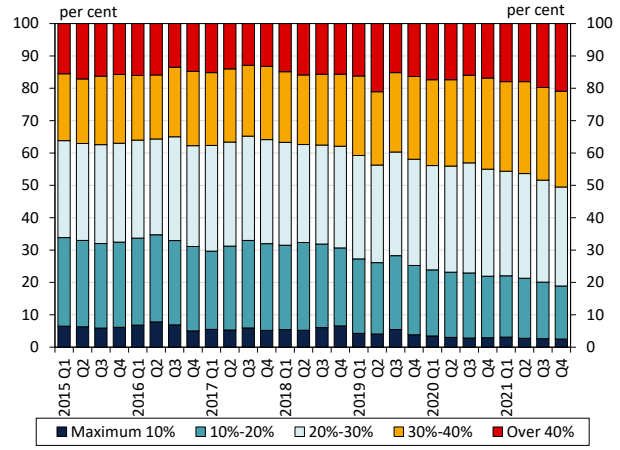
4.2. Tightness increasing in parallel with a rise in loan amounts

Average contract sizes are increasing rapidly in parallel with the upswing on the housing market. The average amount of housing loans and thus their original maturity have increased considerably in past years: the average amount of new contracts rose by HUF 1.1 million to HUF 13 million in a year (Chart 36), while the average – contract amount-weighted – maturity reached 19 years by the end of the year. At end-2016, the loan amount was at least HUF 8 million for one quarter of the contracts, while it already exceeded HUF 15 million at end-2021. The rise in 2021 was affected by a composition effect as well: on a volume basis the weight of loans for purchasing or building new homes increased to 28 per cent by December 2021, from 19 per cent one year earlier. This is primarily attributable to the FGS GHP available as of October, which, in December, accounted for more than two thirds of the loan volume borrowed for the construction or purchasing of new homes. Summing up on a debtor basis the market-based and subsidised housing loans as well as unsecured loans used to substitute for own funds, the average loan size was HUF 17 million by the end of the year taking all of the housing loan borrowers into account. Examining only those who took more than one housing loan (e.g. complemented a subsidised-rate HPS loan with a market-based housing loan), this figure is HUF 26 million.

The income tightness of housing loan borrowers has increased. The debt cap rules in effect from 2015 ensure that individual indebtedness does not reach an unsustainable level. The average payment-to-income ratio of new housing loans was 29–31 per cent in 2021, indicating a low

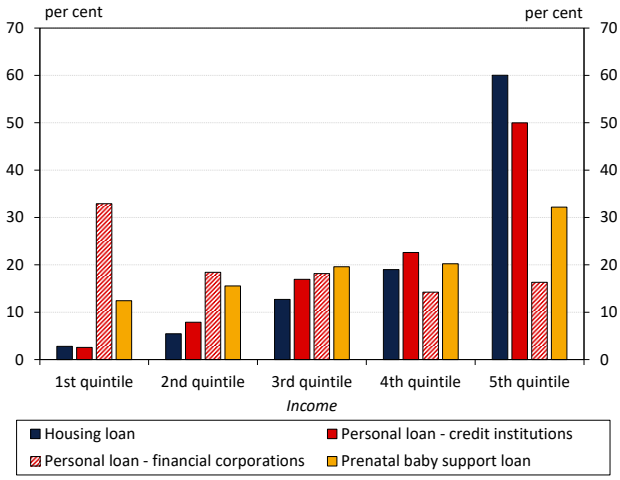
[18] The forecast is based on the end of the rural HPS on 30 June and the prenatal baby support loans on 31 December in line with the legislation that was in effect when the estimate was prepared.

Chart 37: New housing loans by PTI



Source: MNB

Chart 38: Income distribution of borrowers



Note: Loans disbursed in 2021. Limits of income quintiles based on 2020 data. Source: Eurostat, MNB

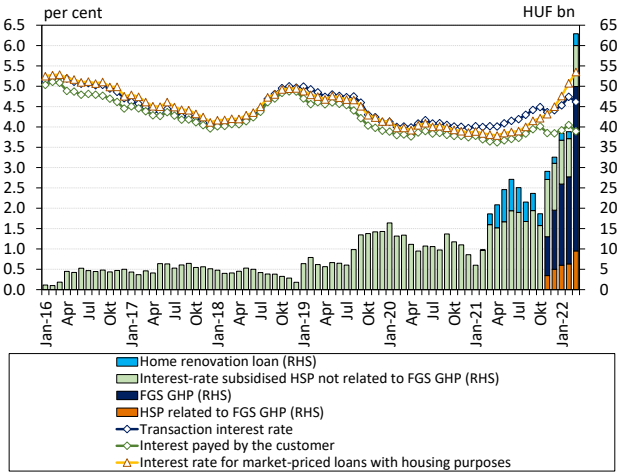
level of tightness in the evolving portfolio as a whole. Nevertheless, the average PTI ratio and the share of contracts with higher PTI ratios have been rising since 2018, and in 2021 already the share of loans with relatively higher PTI ratios of above 40 per cent also increased: their share was 21 per cent in 2021 Q4 (Chart 37). No shift like that is observed in the case of personal loans: the average PTI ratio for contracts concluded by credit institutions and financial enterprises is 31 per cent and 27 per cent, respectively, and the share of PTI ratios above 40 per cent is 26 per cent and 21 per cent.

Clients of credit institutions are still generally higher-income people. Fundamental differences in income are observed between the clients of credit institutions and financial enterprises. For credit institutions it was observed in 2021 as well that those with higher income were overrepresented among the debtors of new housing loans and personal loans: 60 per cent of the former and half of the latter fell into the upper income quintile (Chart 38). By contrast, it is the lowest income quintile that represents a greater proportion among the borrowers of personal loans disbursed by financial enterprises. Similarly to housing loans, the prenatal baby support loan is also disbursed only by credit institutions, although access to this product is more balanced. The crowding out of low-income clients[19] from bank lending was observed in the case of housing loans and personal loans as well: the ratio of those with an income below the median declined by 2-3 percentage points during 2021.

As a result of the growing share of subsidised loans the impact of the increase in interest rates is reflected in client interest rates to a limited degree only. For subsidised loan products the interest rates shown in the central bank interest rate statistics contain the state subsidy as well, i.e. the part of the interest rate that is paid to the bank by the state and not by the consumer. In the case of the subsidised-rate loans available since 2016 and linked to the HPS the client pays a 3 per cent interest rate (just like on the preferential home improvement loan introduced as of February 2021), but the transaction rate that includes the subsidy as well is much higher (Box 4). In the contracts for the loans under the FGS Green Home Programme available since October 2021 the interest rate is usually 2.5 per

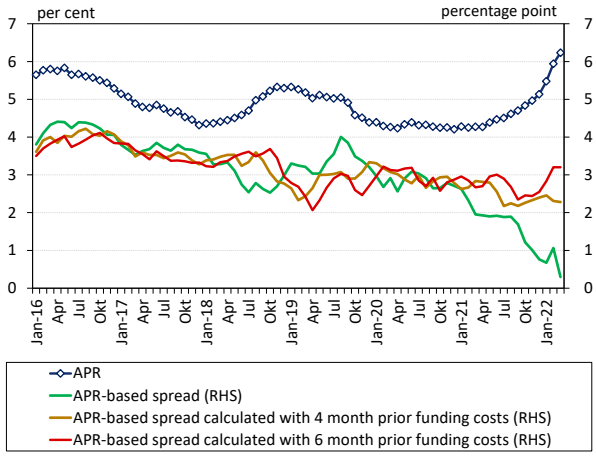
[19] The explanation for the lower participation of lower-income debtors in lending is not that more of their borrowings are refused than in the case for high-income people: according to the findings of the MNB's September 2021 survey entitled 'Financial habits in the post-COVID era', there is a non-linear relationship in terms of income: the degree of credit aversion is greater on average among those with the lowest and highest household incomes.

Chart 39: Transaction and client interest rates on newly disbursed housing loans and the volume of housing loans with preferential interest rates



Note: Average interest rates weighted with contract volume. FGS GHP refers to the FGS Green Home Programme. The transaction interest rate and customer interest rate contain all housing loans, while market-priced loans for housing purposes refer exclusively to the market-based lending facility. Source: MNB

Chart 40: Changes in APR and spread on new housing loans



Note: Contract volume-weighted averages. The FGS GHP is excluded from the data. Spreads are calculated on the basis of BIRS data according to interest rate periods. Source: MNB

cent, while in the case of the HPS loans linked to the programme the client interest rate is 0 per cent. Increased disbursement of the subsidised loans refinanced by the state and the central bank resulted in a widening of the gap between transaction and client interest rates, and thus, on the whole, only a moderate rise is observed in average housing loan interest rates in spite of the increase in the interest rate environment. Between March 2021 and March 2022, the average transaction interest rate rose by 0.6 percentage points, but the average client interest rate was only up by 0.3 percentage points. Compared to that, a higher, 1.5 percentage-point rise took place in the case of market-based housing loans whose interest rate is not subsidised (Chart 39).

The impact of the increase in the interest rate environment on housing loan interest rates is also attenuated by the time needed for the repricing. Given the slower dynamics of interest rate repricing, spreads on housing loans declined to historical lows in March 2022 (Chart 40). As mentioned in the December 2021 Financial Stability Report,[20] according to our estimation, a change in the cost of funds, i.e. in the reference rate, passes through into aggregate housing loan interest rates with a delay of around 3–4 months – based on housing loans with interest rate fixation for 1–5 years. Accordingly, the spreads currently observed do not necessarily mean that banks actually eased their pricing conditions. If the presumed time requirement for repricing is taken into account, i.e. the average APR of the given month is compared to costs of funds observed 3–4 months earlier, the resulting spread level for the later months is approximately 2 percentage points. Projecting this to the average monthly cost of funds, by the summer of 2022 the average APR on housing loans may even exceed 7–8 per cent.

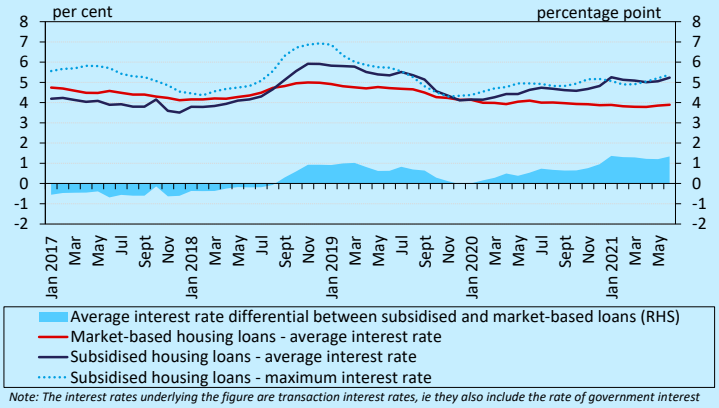
[20] Financial Stability Report, December 2021, Box 5.

BOX 4: PRICING OF SUBSIDISED LOANS IN THE HOME PURCHASE SUBSIDY SCHEME FOR FAMILIES

In addition to the HPS available since 1 June 2015, the subsidised lending related to the scheme also plays an important role in the financing of home purchase and construction; between the launching of the HPS and end-2021, households took out subsidised loans amounting to a total HUF 595 billion within the framework of the scheme. The pricing framework of these subsidised loans is set out by law.[21] Accordingly, the interest rate to be paid by the client will be exactly 3 per cent during the whole term, while the interest rate subsidy may not exceed 130 per cent of the five-year government securities market yield. Given the interest rate subsidy rules, it is in the banks' interest to determine the highest possible transaction interest rate, while the 3 per cent client interest rate fixed for the entire term does not encourage clients to make credit institutions compete. Consequently, the state potentially pays a higher amount in the form of the subsidy than would otherwise be the case under market conditions, and thus based on the borrowers' real risk profiles.

According to interest rate statistics, banks disburse the loans with interest rates that are close to the statutory maximum. According to the MNB's interest rate statistics, starting from 2018 H2 until November 2021 the total average transaction interest rate on subsidised housing loans was higher than that on market-based loans. This difference amounted to 1.3 percentage points on average in 2021 H1. The average interest rate on subsidised housing loans is typically around the statutory maximum, which suggests that banks utilise the scope available for pricing, and usually determine the highest interest rate in the case of subsidised loans.

The average interest rate on market-based and subsidised housing loans, the statutory maximum interest rate on subsidised loans and the interest rate differential between market-based and subsidised interest rates



Note: The interest rates underlying the figure are transaction interest rates, ie they also include the rate of government interest subsidy. Source: MNB

We examined whether the higher transaction interest rate of subsidised housing loans is attributable to a composition effect or to banks' pricing practices. Namely, the reason for the pricing discrepancy could be that banks disburse the subsidised housing loans to expressly riskier households, or that the amount of these loans is lower and their interest rate period is shorter, or that the borrowers might live in municipalities where the real estate market is less robust. To examine the question, we used a micro level database that contains more than 50,000 housing loan contracts, including housing loans whose interest rate period corresponds to the statutory 5-year interest rate period of the HPS loans. We used two kinds of approaches for the examination:

I. With the help of an OLS linear regression model we estimated the interest rate on the loan, using the size of the loan amount and the variables that capture the credit risk (e.g. DSTI, LTV, debtor's income) as control variables, while our main explanatory variable was the binary variable indicating the subsidised nature of the loan in interaction with quarter of the loan contract.

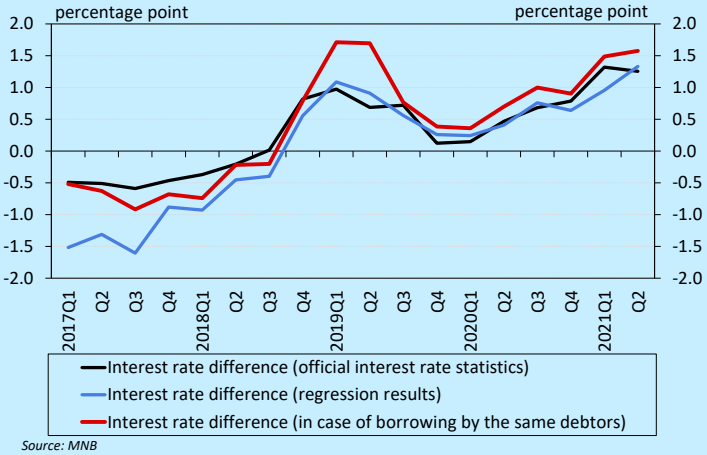
II. The sample was narrowed down to the debtors who took both subsidised and market-based housing loans on the same day. Accordingly, in their case the borrowing was from the same bank, on the same day, involving the same collateral and, of course, the same debtors (same income). In this case the interest rate spread

[21] Government Decree No 16/2016 (II.10) on housing subsidies related to the construction and purchase of new dwellings, and Government Decree No 17/2016 (II.10) on the family housing allowance that can be applied to purchase or extend used homes.

on the two loans contains only a minimum composition effect (e.g. due to the different loan amounts and maturities), which was also controlled with an OLS regression.

Our regression estimate confirms that on average the subsidised nature increases the transaction interest rate. In the first case, the interaction variable, which shows the effect of the subsidised nature every quarter, is negative from 2017 Q1 until 2018 Q3, then it is continuously positive and significant from 2018 Q4, i.e. according to our estimates, starting from this quarter the subsidised nature adds to the impact of the transaction interest rate even without the composition effect. Taking the control variables into account, in 2021 Q1 and Q2 the estimated interest rate spread between market-based and subsidised housing loans was already 1 and 1.3 percentage points, respectively, nearly corresponding to the average interest rate spread shown in the official interest rate statistics. In our second approach, examining the average interest rate spread between subsidised and market-based housing loans borrowed by the debtor on the same day, it is seen that – similarly to the result of the regression estimate – the value is negative until 2018 Q3, then it is positive.

Interest rate difference between market and subsidized housing loans

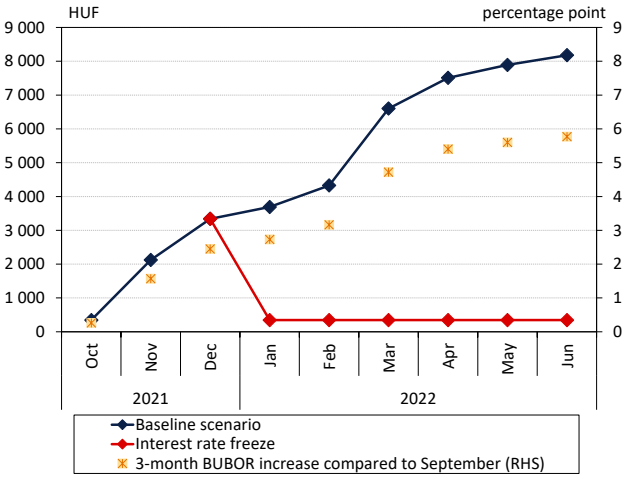


Source: MNB

Applying two approaches to examine the issue we conclude that even following the controlling for the different compositions of the two types of product there is a significant interest rate spread, i.e. the interest rate on subsidised loans may be unnecessarily high – mainly from the state's point of view.

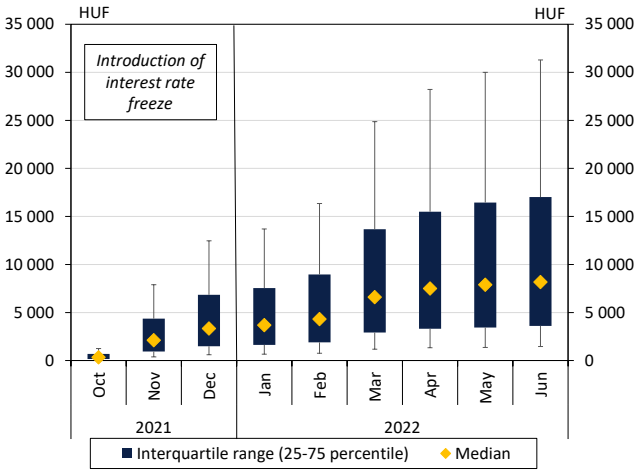
Our findings suggest that the higher transaction interest rate on HPS loans is not attributable to a composition effect. Therefore, the main reason for the interest rate spread may be that the legal framework (fixed client interest rate) does not sufficiently encourage consumers to make banks compete, and thus it is rational for banks to price these loans at the level that corresponds to the statutory maximum. However, all this results in additional expenditure for the state, which could be avoided if the interest rate to be paid by the client is not fixed in legislation. Accordingly, with appropriate competition it could be ensured that the subsidy appears at the clients – in line with its original objective.

Chart 41: Median instalment increase of mortgage loan contracts repricing in the given month



Note: Increase in repayment instalment compared to September. Taking into account the September 2021 portfolio affected by the interest rate stop, disregarding contracts terminated by December 2021. Based on market BUBOR expectations on 31 March 2022. Source: MNB

Chart 42: Distribution of instalment increase in case of mortgage loan contracts repricing in the given month, excluding the interest rate stop



Note: Based on the September 2021 portfolio, disregarding the contracts terminated by December 2021. Based on market BUBOR expectations on 31 March 2022. The lower line marks the 10th percentile and the upper line the 90th percentile. Source: MNB

4.3. Interest rate risk increasing for variable-rate mortgage loans outstanding

The measure means significant easing for some of the debtors falling under the scope of the interest rate stop. The interest rate stop measure[22] provides temporary protection in 2022 H1 for the debtors of some 330,000 contracts falling under the regulation combating the effect of the increasing interest rates on instalments. Fixing the instalments at the October level typically results in a HUF 4,900 lower monthly repayment between January and June in the case of the contracts concerned (Chart 41).[23] At the same time, for almost 85,000 contracts it reduces the instalment increase by more than 10,000 forints a month. By end-H1 the measure may result in a decline of some HUF 16.4 billion in repayment instalments and a HUF 9.3 billion lower principal debt.

With the phasing out of the interest rate stop, one quarter of the debtors concerned face a significant increase in their instalments. As the interest rate stop is phased out, the rise in interest rates will result in higher instalments for the debtors of variable-rate loans (Chart 42). For example, the upper tenth of the instalment increase taking place between September and June would have exceeded HUF 30,000 in nominal terms for contracts under the scope of the interest rate stop and repricing in June. Expressing the instalment increase in a percentage, the upper decile would have faced an increase of 48 per cent without the interest rate stop.

In spite of the rise in instalments, various factors reduce the credit risk of variable-rate mortgage loans. In general, variable-rate credit institution mortgage loans have already been amortised significantly by now, i.e. they have a low outstanding principal debt and a short residual maturity on average, and even in the case of a hypothetical, additional 500 basis point lending rate rise compared to the December interest rate levels they would face a manageable instalment increase (Table 1). It also reduces the risk that in view of the amortisation and the price rise on the housing market their outstanding principal debt is relatively low

[22] Pursuant to Government Decree No 782/2021 (XII.24) and its extension, the interest rate stop primarily concerns consumer mortgage loan and housing-purpose financial leasing agreements that are tied to a reference rate and have up to a one-year initial rate fixation, whose interest rate is due to change between end-October 2021 and end-June 2022. It also covers loans with an interest rate subsidy whose interest rate changes in the above period and have a longer interest rate period, but are not fixed until maturity.

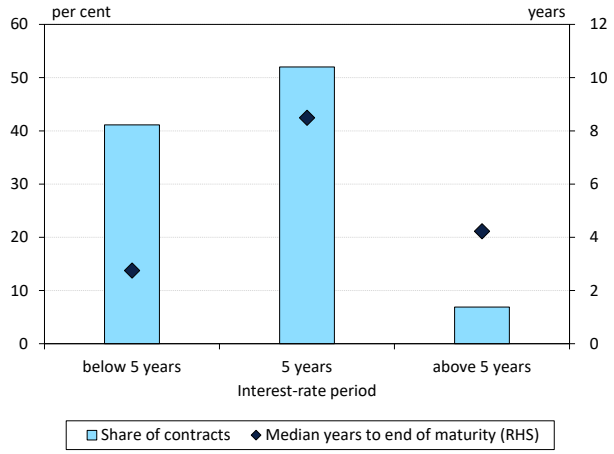
[23] According to market expectations as of 31 March, the 3-month BUBOR will increase by more than 550 basis points between 27 October 2021 and end-June 2022. Our calculation presumes a complete feed-through of the BUBOR rise into bank interest rates.

Table 1: Features of variable-rate mortgage loans affected by a major rise in instalments in the case of a hypothetical, 500 basis point interest rate increase

	Above 15 per cent and above 15 thousand HUF increase in monthly instalments	Above 20 per cent and above 20 thousand HUF increase in monthly instalments	Above 30 per cent and above 30 thousand HUF increase in monthly instalments	Mortgage loans with maximum one year interest rate fixation period	*Mortgage loans with over one year interest rate fixation period*
No. of contracts (thousand)	83 (25%)	53 (16%)	24 (7%)	336	*525*
Volume of loans outstanding (bn HUF)	921 (61%)	704 (46%)	414 (27%)	1520	*3915*
Median size of loan outstanding (mn HUF)	9	10	14	3	*5*
Median increase in monthly instalment (thousand HUF)	25	30	44	7	*14*
Median time to maturity (year)	15	17	20	8	*10*
Disbursed contracts in 2015 or after (thousand)	35	26	13	83	*437*
Ex FX-denominated contracts, converted into HUF (thousand)	35	21	8	155	*4*
Current LTV (per cent)	42	45	51	23	*33*
Contracts in moratorium (thousand)	14	10	5	36	*38*

Note: Fixed rate: mortgage loan contracts with interest rate variable over one year. Variable rate: mortgage loan contracts with a maximum 1-year interest rate period. Based on loans outstanding in December 2021. Source: MNB

Chart 43: Mortgage loans with interest rate periods over one year and repricing in 2022

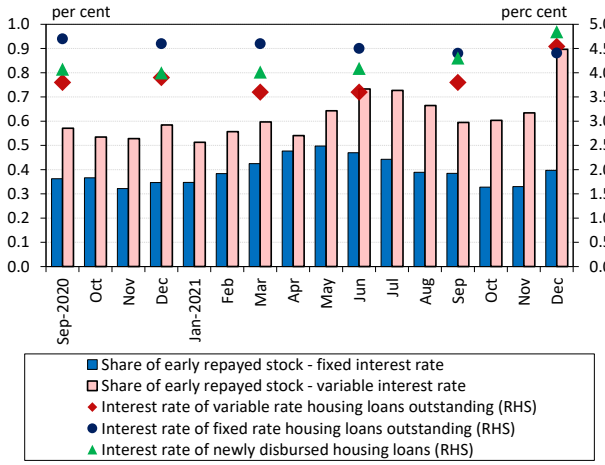


Note: Calculating with the loans outstanding at end-December 2021, distribution based on number of contracts, excluding loans of building societies. Source: MNB

compared to the current market value of the collateral. Nevertheless, some of the debtors (who have longer residual maturities and higher principal debts) would suffer major instalment hikes in the aforementioned hypothetical scenario. Risks are also mitigated in the case of these contracts by the fact that many of them (even in the most vulnerable group, 54 per cent of contracts) were concluded following the introduction of the debt cap rules. However, following the phasing out of the interest rate stop (and the moratorium), these debtors will have to cover the instalment increase parallel to a rise in other costs of living due to higher inflation.

A small portion of the mortgage loans outstanding with an interest rate fixation for over one year will be repriced in 2022. The interest rate hike cycle directly affects not only the variable-rate mortgage loans but also some of the loans with interest rate fixation for over one year: within this portfolio, nearly 60,000 contracts will be repriced in 2022, corresponding to 4 per cent of the mortgage loans outstanding at end-2021. One fifth of them are contracts with building societies, and excluding them reveals that more than half of the fixed-rate mortgage loans repricing in 2022 are loan contracts with longer interest rate periods of at least 5 years, and typical residual maturities of less than 10 years (Chart 43). 40 per cent of them have interest periods shorter than 5 years, but median maturities within 3 years. This means that after 2022 these contracts will be typically repriced only once more. In addition, half of the loans were disbursed following the introduction of the debt cap rules, which further mitigates the risks of these loans.

Chart 44: Early repayment of variable and fixed-rate loans



Note: Average interest rates weighted by outstanding principal debt and contract amount. The interest rate on new disbursements was calculated excluding the FGS GHP. Source: MNB

Early repayment rate higher for variable-rate loans. Clients can eliminate the increasing interest rate risk by repaying loans early. A complete repayment of the principal debt outstanding prior to maturity is somewhat more typical in the case of variable-rate loans compared to fixed-rate ones. It was low in the case of both products, below 1 per cent of the portfolio in the past one and a half years (Chart 44) share of early repaid stock, but from the end of last year slightly higher early repayment activity became typical in the case of variable-rate loans. In addition to the increase in interest rates, the higher early repayment ratio for variable-rate loans may also be attributable to the greater amortisation of these loans, and thus their principal debt is lower: at end-2021, 57 per cent of the original contract amount of variable-rate mortgage loans and 89 per cent of the original amount of mortgage loans with interest rate fixation for over one year was still outstanding. Another way of reducing the interest rate risk is to replace the variable-rate loans with fixed-rate ones, but between end-2019 and end-2021 a mere 4 per cent of variable-rate mortgage loans, i.e. around 11,000 contracts[24] were amended with loans containing an at least 5-year interest rate period. It is still important, however, that clients gather information about the risks of variable interest rates, consider the advantages and possibilities of interest rate fixation, and thus make well-informed decisions to stabilise the size of interest repayment instalments.

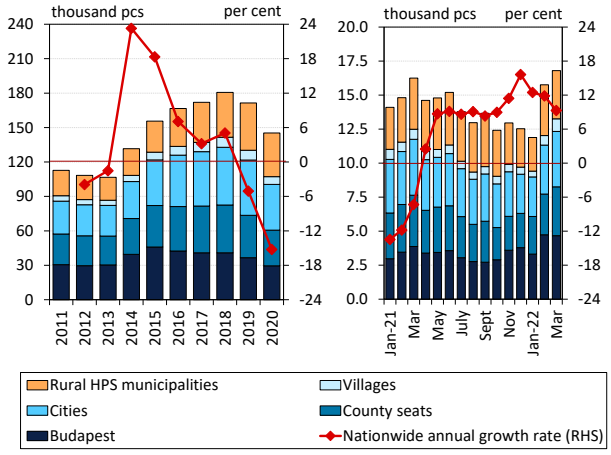
[24] A mere 6.4 per cent of the mortgage loan contracts under the scope of MNB Recommendation 9/2019 on the interest risk of variable-rate mortgage loans and on promoting the provision of information on the management thereof, i.e. somewhat more than 5000 contracts, were replaced by contracts with an at least 5-year interest rate period between end-2019 and end-2021.

5. Real estate markets: overvaluation in the housing market, uncertainty in the commercial real estate market

House prices continued to increase in 2021. Compared to Budapest, price dynamics accelerated much faster around the country: The annual price change in real terms amounted to 3.9 per cent in Budapest, while it was 16.8 per cent and 14.2 per cent in other towns and villages, respectively, in 2021 Q4. We estimate the overvaluation of house prices rose to a historical high nationwide in view of the significant price increases in the housing market. The European Systemic Risk Board (ESRB) issued a warning to Hungary in view of the increase in housing prices parallel to the upswing in lending. The supply of new homes was down considerably, by 29.5 per cent in 2021, but the preferential VAT for residential properties introduced temporarily will still make a positive contribution to the new supply in the coming years. In 2021, the affordability of home purchasing deteriorated for households with no recourse to family subsidies, and looking ahead, a further rise in market-based housing loan interest rates will result in a decline in demand.

The commercial real estate market is characterised by varying degrees of uncertainty among segments, sometimes coupled with low rental demand and expanding project financing. Despite the protracted challenges, both the number of new hotel rooms and project financing loan stock increased in this segment in 2021, while substantial stock under moratorium can be observed in case of hotel project loans. Looking ahead, the supply of new offices is expected to expand considerably, and the vacancy rate is expected to grow in the Budapest office market. Favourable developments were observed on both the demand and supply sides of the industrial/logistics market in 2021, but the sustainability of the current demand level is uncertain, while major speculative development projects also appeared. Tenants in the less export-oriented retail trade segment may be most exposed to the effect of the weakening forint exchange rate. The rises in energy and construction material prices as well as supply problems because of the pandemic and amplified by the war increase the completion risk in the case of the financing of development projects under construction. At the same time, the project loan exposure of credit institutions to commercial real estate, even with increasing corporate bond purchases, is significantly lower in terms of regulatory capital compared to the level experienced during the previous crisis.

Chart 45: Number of housing market transactions by type of municipality and annual growth rate



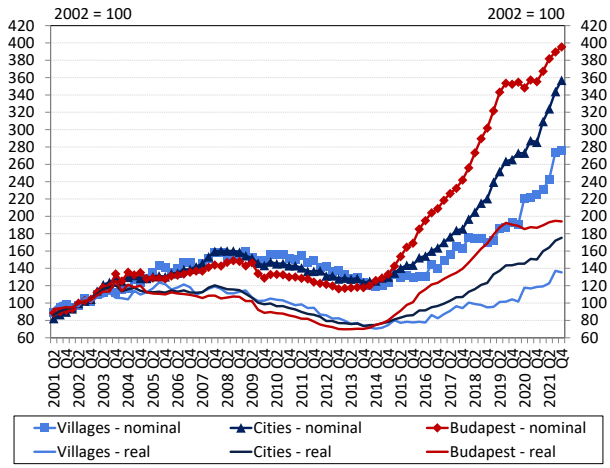
Note: 12-month rolling growth rate at monthly frequency. Taking only 50 and 100 per cent acquisitions of ownership by private persons into account. From April 2020 until September 2021, data from the NTCA duty database adjusted based on estimates of level of processing by municipality type. As of October 2021, based on real estate agent transactions and estimated market shares. According to our estimate, real

5.1. Significant increase in prices and tightening supply in the housing market

The number of transactions grew significantly in Budapest in both 2021 H2 and in 2022. The demand-increasing effect of the home purchase subsidies introduced in January 2021, which was still significant in the first half of the year, declined gradually during 2021, and thus in H2 the number of housing market transactions grew only by 2.6 per cent year on year (Chart 45). In the same period, the number of transactions outside of Budapest declined by 2.2 per cent, while the number of sales and purchases in the capital increased by 21.5 per cent. In 2022 Q1, according to data of the ingatlan.com advertising website, demand significantly exceeded the level observed in the previous half-year. As a result, by March the number of monthly sales and purchases rose to a nearly 4-year high nationwide, whereas in Budapest it counts as a record high in the current housing market cycle. Purchases brought forward due to the interest rate rise or to defend against

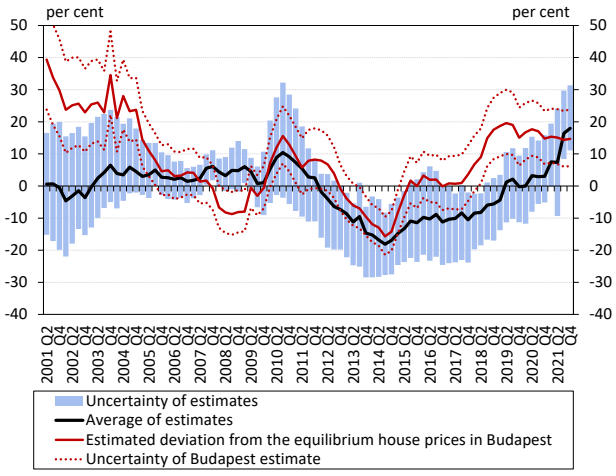
estate agent transactions amounted to 11.6 per cent of the national market turnover and 13.5 per cent of the sales in Budapest in March 2022. Source: NTCA, MNB, housing agent database

Chart 46: *MNB house price index by type of municipality*



Note: 2002 = 100%. Source: MNB

Chart 47: Deviation of house prices from the level justified by estimated fundamentals, nationwide and in Budapest



Note: For detailed methodology, see the MNB's Housing Market Report – November 2021. Source: MNB

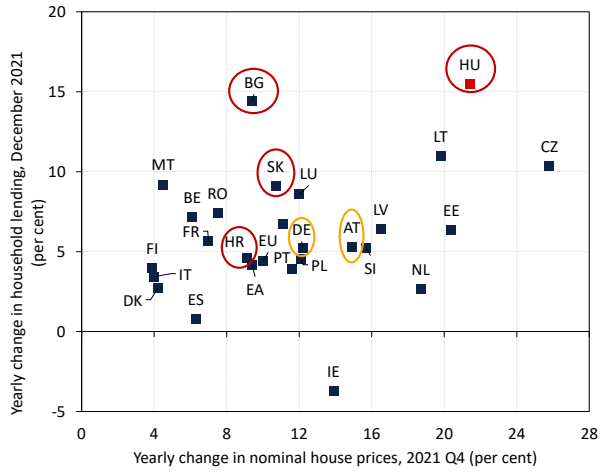
inflation as well as the MNB's Green Home Programme may also have contributed to the renewed increase in housing market demand. The rise in the number of transactions in the capital took place parallel to persistently lower demand from foreign citizens compared to the pre-pandemic period.

The annual dynamics of house prices accelerated considerably in 2021, mainly outside of the capital. According to the MNB house price index, as a national average, by 2021 Q4 the annual nominal growth rate of house prices rose from 8.9 per cent at end-2020 to 21.4 per cent (Chart 46). Municipalities outside of Budapest were major contributors to the significant acceleration in house price dynamics. Following stagnation at the end of the previous year, by 2021 Q4 the annual growth rate in Budapest rose to 11.3 per cent. At the same time, the annual growth rate of house prices in towns and villages around the country was up from 7.6 per cent to 25.0 per cent and from 16.9 per cent to 22.3 per cent, respectively. The increase in house prices outside of Budapest is high in real terms as well. Compared to the level one year earlier, house prices in Budapest in real terms were 3.9 per cent higher in Q4. At the same time they were 16.8 per cent and 14.2 per cent up in other towns and villages, respectively. According to transaction data from real estate agents, the rapid increase in house prices continued until March 2022, with the annual nominal growth rate rising to 25.3 per cent nationwide and to 17.8 per cent in Budapest.

The overvaluation of house prices rose to a historical high as a national average, and it also high in Budapest. In 2021, house prices in real terms increased to a greater degree than household disposable income until Q4 both in Budapest and as a national average, pointing to a rise in the overvaluation of house prices (Chart 47). On the whole, also as a result of the improving unemployment rate, in 2021 the overvaluation of house prices in Budapest remained at around the same level, i.e. 15 per cent, which is still high. At the same time, in view of the significant rise in house prices outside the capital, the overvaluation of house prices as a national average was up considerably, even exceeding the figure for the capital. According to our estimate, house prices in Q4 exceeded the level justified by macroeconomic fundamentals by 18 per cent nationwide.

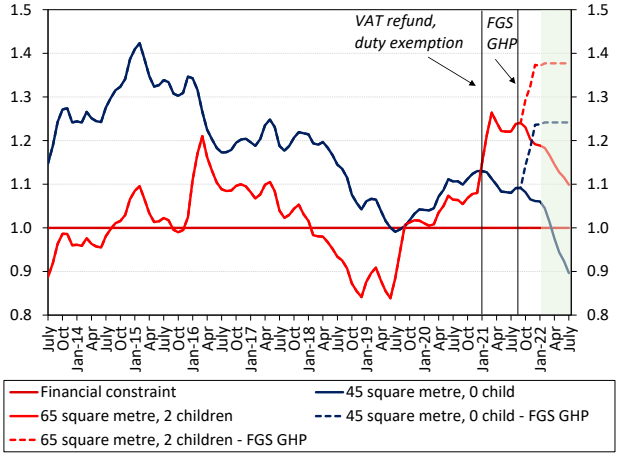
Given the housing market overvaluation and the risks of increasing indebtedness, the ESRB issued a warning to Hungary in February 2022. The annual house price rise of 21.4 per cent in Hungary in 2021 Q4 is the second highest

Chart 48: Changes in nominal house prices and household lending by European comparison



Note: The yellow ellipses indicate the countries that received a recommendation from the ESRB regarding the medium-term vulnerability of the housing market in February 2022, whereas the red ellipses depict the countries that received a warning. The chart does not show Liechtenstein, which also received a warning. Yearly change in nominal house prices: GR: 9.1%; CY: -5.3%. Yearly change in household lending: GR: -11.9%; CY: 0.8%. Source: Eurostat, ECB, BIS, MNB.

Chart 49: Housing Affordability Index (HAI) for new homes in Budapest



Note: The HAI shows the number of times the net income of a household with two average earnings covers the income required for the financed purchase of a new home of 45/65 square meters in Budapest.[25]
Source: MNB, Housing agency database, HCSO

among the EU countries behind the Czech Republic, while at the same time the annual 15.4 per cent expansion in household loans outstanding in December 2021 was the highest figure in the EU (Chart 48). The ESRB issued a warning to Hungary and other countries because of the systemic risks potentially building up in the medium term in the housing and credit markets.[26] According to the ESRB's assessment, government support measures and subsidised loans contribute to the higher risks on the domestic housing market due to the insufficient supply. Their assessment suggests that the creation of a regulatory environment required for sufficient supply could ease the pressure on house prices and the credit market demand. If the housing and credit market developments – also taking the effects of the Russian-Ukrainian conflict into account – point in the direction of an increase in cyclical systemic risks, the MNB – in line with the ESRB proposal as well – can also mitigate them through activating the countercyclical capital buffer, further strengthening the bank's resilience to shocks.

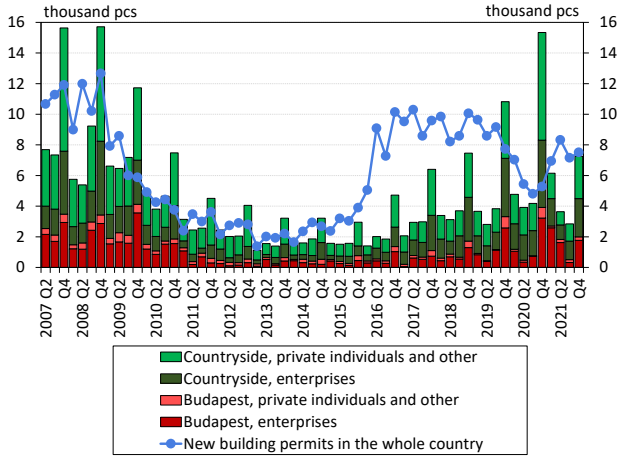
The dynamic rise in house prices and the increase in housing loan interest rates are significantly impairing availability on the housing market. In 2021, the new home purchase subsidies introduced at the beginning of the year (VAT and duty exemption if the HPS is used) significantly improved the affordability of home purchases in the market of new homes for families raising children. Over the rest of the year though, the increase in average wages did not offset the rise in house prices, which, together with the nascent rise in housing loan interest rates, worsened availability at the end of the year (Chart 49). If we presume that the rise (+346 basis points) in long-term costs of funds (BIRS) between August 2021 and March 2022 will completely pass through into housing loan interest rates, then on a market basis – disregarding the changes in house prices and wages – the affordability of home purchasing may decline to the least favourable level seen in recent years, which will result in a decrease in demand. Family support measures may then take on an even greater role on the housing market. The FGS GHP improved affordability for green homes significantly in the last months (Box 5).

[25] The parameters of the loan product, except for the interest rate, are constant until maturity. LTV = 70 per cent, DSTI = 30 per cent, maturity = 15 years. If the value of the indicator is above 1, the family is able to purchase a home from credit without being stretched financially, but if it is below 1, the purchase poses excessive risk and a material burden. Net wages are seasonally adjusted data series. Assuming a 2.5 per cent APR in the case of the FGS GHP. Except for market-based interest rates, all other parameters are unchanged as of January 2022. Between January 2022 and July 2022 for the market-based interest rate it was presumed that the monthly BIRS changes observed 4 months earlier completely feed through into the housing loan interest rates.

[26] https://www.esrb.europa.eu/news/pr/date/2022/html/esrb.pr220211~9393d5e991.en.html

By the end of April 2022, however, the volume of loan applications received by most credit institutions under the GHP had also reached the new limits, so banks stopped accepting loan applications. In line with the green toolkit strategy adopted 2021 July, the MNB intends to support the renewal of Hungarian real estate stock in the long term and is examining the conditions under which it can support the domestic green transition in a sustainable manner after the HUF 300 billion budget is used up.

Chart 50: Number of new homes completed in a breakdown by Budapest and outside of Budapest as well as by owner, and the number of new home building permits issued



Source: HCSO

The number of new homes completed dropped considerably in 2021. Compared to the previous year, 29.5 per cent fewer new homes received occupancy permits in 2021 (Chart 50). The main reason for the major drop in new supply is that in 2020 a significant number of construction projects may have been brought forward due to the energy efficiency requirements that originally were to be tightened as of the beginning of 2021. In addition, the uncertainty around the preferential VAT for residential properties experienced in 2020 may also have contributed to the lower number of constructions in 2021. In 2021, the greatest decline (of around 48.7 per cent) took place in the number of new homes ordered for construction by natural persons outside the capital. Although the number of new homes ordered for construction by enterprises in Budapest expanded by 17.3 per cent year on year, this was thanks to the favourable figures in H1. Nevertheless, the number of new building permits for homes was up by 32.7 per cent in 2021, which was attributable to the temporary reintroduction of the 5 per cent preferential VAT for residential properties, which will still make a positive contribution to the new home supply in the coming years.

BOX 5: IMPACT OF PROPERTY ENERGY RATINGS ON INTEREST RATES

According to the green hypothesis, the credit risk of green mortgage loans is lower, and so it may be justified for banks to set lower interest rates for these transactions. Given the lower utility cost, the more favourable energy efficiency may have an effect on the costs of living and thus on the probability of default (PD) as well as the loss given default (LGD). Various studies[27] come to the conclusion that the energy efficiency of buildings has significant explanatory power in terms of clients' probability of default. In addition, the lower risk of extending green mortgage loans is corroborated by the potentially greater stability of the value of energy-efficient properties. So according to the green hypothesis, the credit risk of green mortgage loans is lower, and thus in an ideal case banks determine lower interest rates for these transactions.[28] In this box we firstly examine with OLS regression estimation how the energy performance certificate of buildings affects the interest rates on new housing loans, and secondly we present to what extent the interest advantage of the FGS GHP offsets the greater loan amount that stems from the higher price of green properties.

Our examination was carried out based on a large-sample, contract-level database. Our regression estimation was prepared on an individual micro level database by loan agreement, containing 23,000 observations. With regard to the new housing loans disbursed in 2021 the database contains the main characteristics of the debtor, the loan agreement and the collateral, which – in addition to the energy performance certificate – were used in the estimate as control variables. Due to their special nature, the contracts concluded under the FGS GHP were excluded from the sample. In the estimation, the observations were classified into two groups according to the energy performance certificate (buildings with CC or better, and worse than CC energy efficiency). The set of observations was separated based on the CC energy rating because in terms of energy efficiency these properties are already considered modern. According to the regulation in effect until July 2022, the current requirement for newly built residential properties is a minimum certification of CC.

Based on our model, banks' pricing practices do not differ in the case of properties with better or weaker energy characteristics. Based on the R^2 statistics, the explanatory power of the model reached 68 per cent, and for the most important question of our analysis we found the following: for properties with an energy rating of CC or better, a negative partial effect cannot be measured even at a 10 per cent significance level for the interest rate of the contract. This finding suggests that when the real properties are only divided into two broader groups according to energy performance certificate, no statistically significant difference is observed in banks' pricing practices regarding properties with better and weaker energy characteristics when other control variables are involved. We had intuitive results with regard to other explanatory variables involved in the estimation.

Compared to the CCHL scheme with interest rate fixation until maturity, the interest advantage of the FGS GHP is able to offset the higher price of properties with better energy characteristics within a 5-year term, while in the case of loans with interest rate periods of 10 years and 5 years, it can do so if the term is 7 and 15 years, respectively. Properties with energy performance certificate BB are typically more expensive (by 6.2 per cent[29] according to our estimate) than average flats (identical in all other respects except the energy rating). The starting point of our analysis is the average square metre price of new properties with energy performance certificate CC, included in the Eltinga Housing Market Report, and we draw our conclusions comparing that price to the spread estimated for the energy performance certificate BB. In the case of both the CCHL and the FGS GHP schemes, the interest advantage is

[27] See, for example, Baccega et al. (2019): Technical report on the portfolio analysis of banks' loan portfolios; Billio et al. (2021): Buildings' Energy Efficiency and the Probability of Mortgage Default: The Dutch Case; Guin et al. (2022): Risk differentials between green and brown assets?; Schütze (2020): Transition Risks and Opportunities in Residential Mortgages.

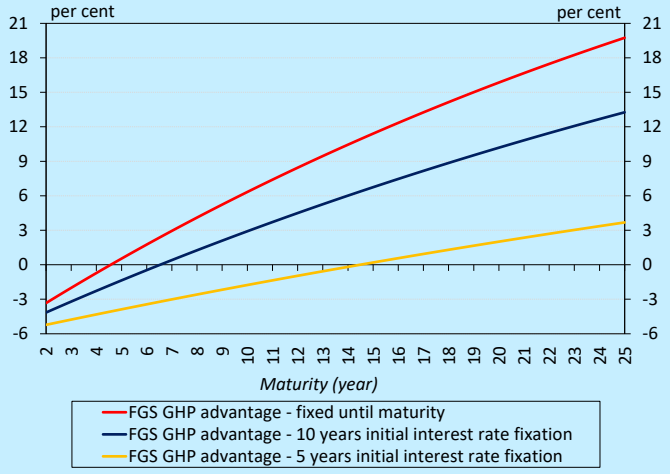
[28] The fulfillment of the green hypothesis can also be supported by regulatory incentives: for example, the MNB releases part or all of the capital requirements prescribed in Pillar 2 of capital regulation for green housing loans, the effect of which may translate into interest rates in the future.

[29] For details of the estimate see Box 3 of the November 2021 Housing Market Report, with the amendment that 2021 Q4 data were also included in the estimate, meaning the additional price effect estimated for the new home projects with BB certification rose to 6.2 per cent.

calculated based on the weighted average annual percentage rate of charge (APRC) of the loans disbursed in December 2021, which is 2.6 per cent for the FGS GHP loans, as opposed to 3.5, 4.5 and 5.3 per cent of CCHL loans with 5 and 10 years of initial rate fixation and ones with the interest rate fixed until maturity, respectively. [30]

Accordingly, if under the market conditions in December 2021 – depending on the interest rate period – the debtor took out a loan with a maturity matching at least the above conditions, it was more advantageous for them to purchase a property in line with the conditions of the FGS GHP than a lower-priced property with weaker energy features, if for nothing else but the repayment instalments of his loan. Based on a typical housing loan – assuming a 240-month maturity – the resulting repayment instalment in the case of FGS GHP funding is 16, 10 and 2 per cent lower, respectively, than in the case a housing loan financed with the aforementioned three types of loans and whose amount is 6.2 per cent lower. In addition, the advantage of green homes is further increased by their lower maintenance costs.

The advantage of the FGS GHP installment as a function of maturity



Source: MNB calculation

5.2. Low demand and increasing supply-side risks in various commercial real estate segments

Table 2: Main characteristics of the Hungarian commercial real estate market at the end of 2021

	Office	Industrial-logistics	Retail (shopping centre)	Hotel
Vacancy rate	9.2%	3.2%	8.6%	68.5%
Change in vacancy rate versus December 2019 (percentage points)	+2.9	+1.3	+5.7	+47.1
Change in demand versus pre-COVID level	-40%	+53%	-	-55%
New supply under construction as a percentage of existing stock	+14%	+15%	0%	+5%
Change in average offered rent versus December 2019	+5%	+1%	-0-10%	-
Change in investment yield versus December 2019	0 bp	-125 bp	+75 bp	-
Ratio of loans in moratorium as of December 2021	0.3%	0.0%	0.3%	14.4%

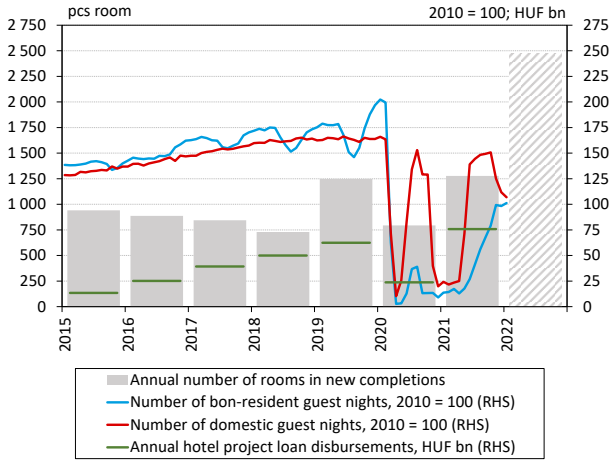
Note: Based on end-2021 data. Data that increases risk of real estate depreciation are highlighted in red, and data that decreases it are highlighted in green. For hotel vacancy rates (100% room occupancy) and changes therein, the date refers to Budapest hotels in the January-December 2021 period. The change in demand compared to the pre-pandemic level is a comparison of the total (gross) rental demand and the annual data of hotel guest nights in 2021 and 2019. Source: CBRE, Cushman & Wakefield, HCSO, MNB

Apart from the industry/logistics segment, the commercial real estate market is characterised by low demand and rising investment turnover. With the exception of the industry/logistics segment, the demand for commercial real estates remains low. The energy price increase amplified by the war and the weakening forint have negative effects on tenants' activities in all segments. Hotel room occupancy is well below the pre-pandemic level, and this is practically the only segment where a substantial amount of project loans outstanding remained in the narrowed moratorium (Table 2). Office market demand did not increase significantly in 2021 either from the low level that triggered by the pandemic. The position of the industry/logistics segment is favourable; the expectation of a rent adjustment based on a strongly expanding development volume did not materialise. In fact, a slight increase was seen in typical rents in 2021. The vacancy rate rose in the retail trade segment; looking ahead, this is where the impact of the weakening of the forint may be the strongest as a result of the lower ratio of export incomes. Investment turnover was up last year; in 2022 investors have to decide on

[30] In the case of CCHL products with initial rate fixation for 5 and 10 years, the interest rate may change at the start of the next interest period, and thus the relative advantage of the FGS GHP may also change at the given point of the term.

purchases and sales amidst significantly lower yield spreads and high inflation.

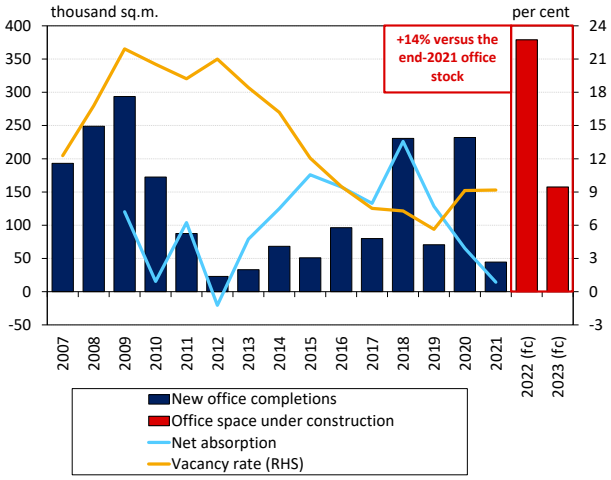
Chart 51: Hotel completions, hotel project loan disbursements and monthly numbers of guest nights at commercial accommodation establishments



Note: For 2022, the number of rooms of the planned annual new hotel completions is shown. Number of guest nights based on seasonally adjusted data, 2010 monthly average = 100. Source: CBRE, HCSO, Hungarian Hotels & Restaurant Association

The war is contributing to the downturn in tourism, which will result in even more protracted challenges for the hotel segment. In 2021, the number of overnight stays in hotels in Hungary increased by 11 per cent year on year, but this is still 55 per cent below the pre-pandemic 2019 level. The deficit is most spectacular in the case of overnight stays by foreigners, which were down 71 per cent in 2021 (Chart 51). The hotel sector was preparing for the return of tourism with a significant volume of new handovers, but the Russia–Ukraine war is a new drag on the recovery of the sector. Firstly, the proximity of the conflict to Hungary may also reduce the interest in visiting the country, and secondly, the considerably increased and still increasing energy prices as well as the rise in consumer prices are hampering the affordability of travelling globally. Parallel to the buoyant development activity, credit institutions' hotel project loan disbursements were also up significantly in 2021. More than three-fold growth in disbursements is measured compared to 2020, but relative to 2019 the expansion is 21 per cent, which corresponds to the trend observed in the years before 2020.

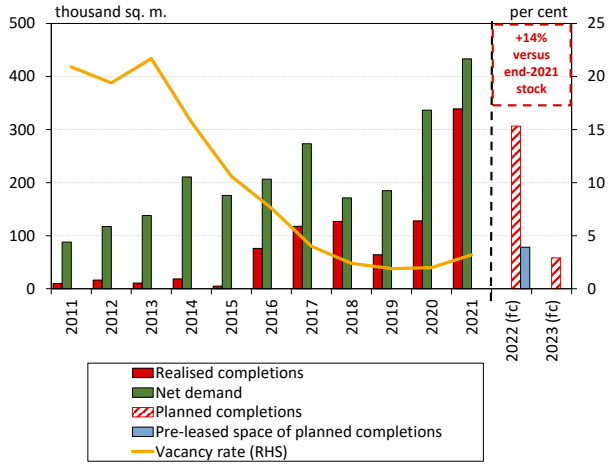
Chart 52: Development activity and vacancy rate in the Budapest office market



Note: Net absorption: shows change in leased stock in the period under review. Based on end-2021 data. Source: Budapest Research Forum, Cushman & Wakefield

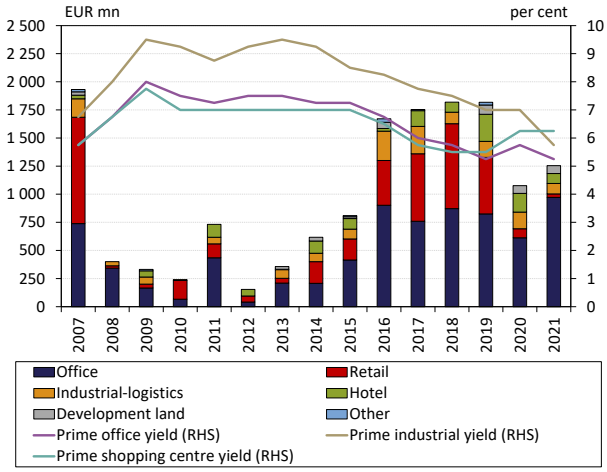
Looking ahead, significant new completion volumes and a rise in the vacancy rate is expected in the office market. In 2021, total demand in the Budapest office market increased by nearly 10 per cent year on year, but the growth measured in rented stock (net market absorption) was barely more than one fifth of that in the previous year due the returned rental properties (Chart 52). No adjustment towards earlier levels, or to a new norm with a higher volume than at present, can be observed in the demand – which declined as a result of the pandemic – in 2021 either. Looking ahead, no economic or market developments can be seen for the time being that would have an impact on the scenario of persistently lower demand for offices. On the whole, in spite of the low net absorption, the vacancy rate was stagnant in 2021 as a result of the relatively few new completions (44,000 square meters). At the same time, more than five hundred thousand square meters of office area is being built, which corresponds to 14 per cent of the end-2021 Budapest office stock. These development projects are planned to enter the market in the next two years. With the demand levels seen in the past quarters, this projects an increase in vacancy. It should be noted, however, that the rise in construction material prices and supply problems further exacerbated by the war may

Chart 53: New completions, net demand and vacancy rate in the industrial/logistics market of Budapest and its agglomeration



Note: The 2022 forecast was prepared based on end-2021 data. Source: Budapest Research Forum, Cushman & Wakefield

Chart 54: Investment volume on the Hungarian CRE market, its composition and prime yields



Source: CBRE, Cushman & Wakefield, MNB

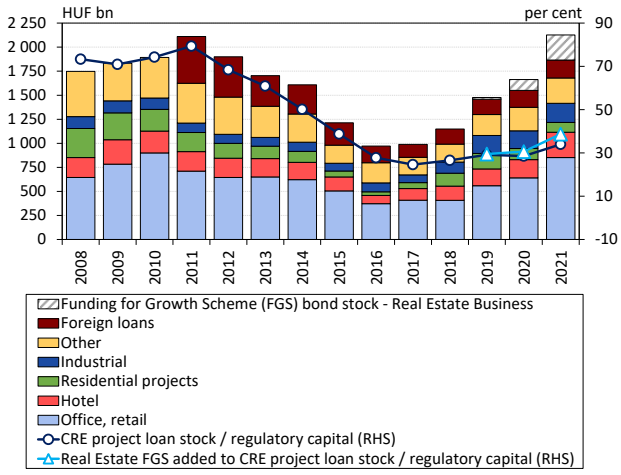
result in postponements of handovers compared to the original plans.

The share of speculative development projects was up in the industry/logistics market, and demand increased significantly, but its sustainability is questionable. The demand for industrial/logistics properties located in Budapest and its agglomeration was up considerably in the past two years. In 2021, net demand, which does not include contract renewals, and net market absorption, which shows the changes in rented stock, increased by 29 per cent and 163 per cent, respectively (Chart 53). In 2021, a record amount of 339,000 square meters of industrial/logistics space was handed over in and around Budapest, while at the end of the year, a further 365,000 square meters was being built, and the volume of handovers may reach 300,000 square meters in 2022 as well. The pre-leased ratio of handovers expected for 2022 is 26 per cent, which is a major drop compared to previous years; several development projects were launched on a speculative basis. As a result of the strong increase in demand, in spite of the high handover volume, the vacancy rate of the segment rose only slightly in 2021, by 1.2 percentage points, standing at 3.2 per cent at end-December.

Expanding investment turnover, declining yields in various segments and growing value of industry/logistics. In 2021, the investment turnover of the commercial real estate market reached EUR 1.25 billion, which is one third lower compared to the turnover in 2019, but 17 per cent higher compared to 2020 (Chart 54). In 2021 H1, the office market prime yield[31] declined by 50 basis points to 5.25 per cent, i.e. to its end-2019 level, remaining unchanged until the end of the year. The prime yield of the industry/logistics segment decreased from quarter to quarter in 2021, and following a total 125 basis point fall it stood at 5.75 per cent at end-December. As a result, the difference between it and the primary office yield settled at 50 basis points. This is a good reflection of the fact that logistics properties in the past two years have become less risky assets increasingly preferred by investors. The shortage of investment products for sale on the supply side also contributes to a further decline in yields. As a result of the decline and the monetary tightening cycle, the yield spread on investment into real estate compared to government securities dropped considerably. Looking ahead, it may impair the willingness to invest, but as a contrasting effect,

[31] Yield data refer to the (initial) yields of CRE transactions, which means a gross yield and is calculated as the ratio of the real estate's annual net rental revenue and the purchase price.

Chart 55: Commercial real estate project loan stock and its ratio to regulatory capital



Note: Credit institutions sector excluding branches, based on non-consolidated data. Until 2010, project loan stocks also include loans to non-resident companies. Source: MNB

the increasing inflationary pressure is pushing investors towards real assets.

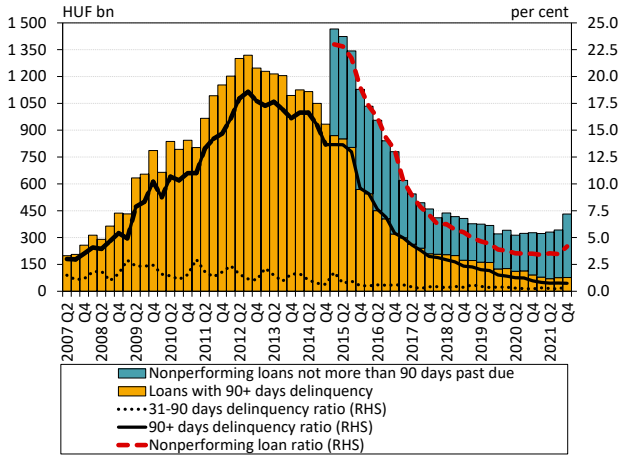
The level of credit institutions' capital adequacy is appropriate to bear the real estate market risks stemming from the increase in project lending and from corporate bond purchases. Between 2017 and end-2021, credit institutions' project loans outstanding collateralised with commercial real estate nearly doubled, but taking into account the shock-absorbing capacity of the institutions, the real estate market exposure is much lower than 10 years earlier. The ratio of commercial real estate project loans to regulatory capital amounted to 34 per cent at end-2021, compared to 73–79 per cent in the period between 2008 and 2011 (Chart Chart **55**). Institutions' real estate market exposure is also increased by the corporate bonds held by them and issued by real estate market companies under the Bond Funding for Growth Scheme (BGS). At end-2021, the value of bonds held by credit institutions and issued by real estate market companies amounted to HUF 261 billion. For development loans, increasing difficulties in construction material supply due to the Russia–Ukraine war and the rise in construction material prices are increasing the completion risk. At end-January 2022, credit institutions held undrawn credit lines corresponding to 24 per cent of commercial real estate development project loans outstanding. Based on undrawn credit lines, in the following periods the greatest increase is expected in residential real estate and hotel development loans outstanding.

6. Portfolio quality: delinquent loans increased slightly with the phasing out of the general moratorium

The ratio of non-performing loans moved from its historical low following the phasing out of the general moratorium in October, but by end-February it reached only 4.2 per cent and 4.3 per cent in the corporate and household segments, respectively. Accordingly, the NPL ratio of the private sector exceeds the EU average by 1.6 percentage points. The increase is attributable to a growth in loans less than 90 days past due but classified by credit institutions in the non-performing category. In the corporate sector, NPL ratios of loans to large corporations as well as to small and micro enterprises also increased. In the case of household loans it was mainly personal loans and home equity loans affected by the deterioration in portfolio quality. European examples show that the phasing out of the payment moratorium did not result in a dramatic deterioration in portfolio quality as the economic effects of the coronavirus pandemic eased. Nevertheless, geopolitical tensions, the economic sanctions against Russia and the pass-through effects of the inflation environment entail major uncertainty in terms of maintaining solvency. The continuous monitoring of portfolio quality is important due to the macroeconomic risks as well as the simultaneous termination of the interest rate stop and the targeted moratorium.

In December 2021, 2 per cent of corporate loans and 6 per cent of household loans were in the targeted moratorium introduced in connection with the coronavirus. Credit institutions have already reclassified most of the loans remaining in the moratorium into the Stage 2 loan loss category, which means elevated risk, or Stage 3, which contains non-performing loans. As far as the portfolio outside the moratorium is concerned, reclassifications into riskier categories were typical in the case of corporate loans in H2. Loan loss provisioning on corporate loans remained practically unchanged in 2021, but increased considerably on the household portfolio. Loan loss coverage at sector level is 46–48 per cent on average in the case of non-performing loans, while it is one of the highest in an EU comparison in the case of Stage 2 loans.

Chart 56: Ratio of non-performing corporate loans in the credit institution sector

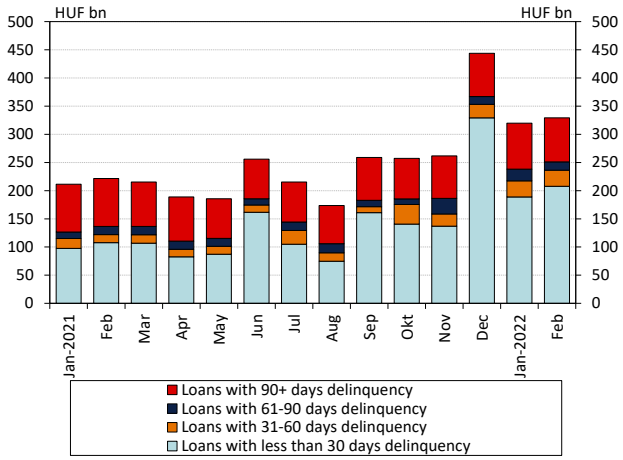


Note: The definition of non-performing loans changed in 2015. From then on, in addition to the loans over 90 days past due, loans less than 90 days past due where non-payment is likely are also classified as non-performing. Calculated by clients until 2010 and by contracts from 2010. Source: MNB

6.1. The ratio of non-performing loans increased from its historical low

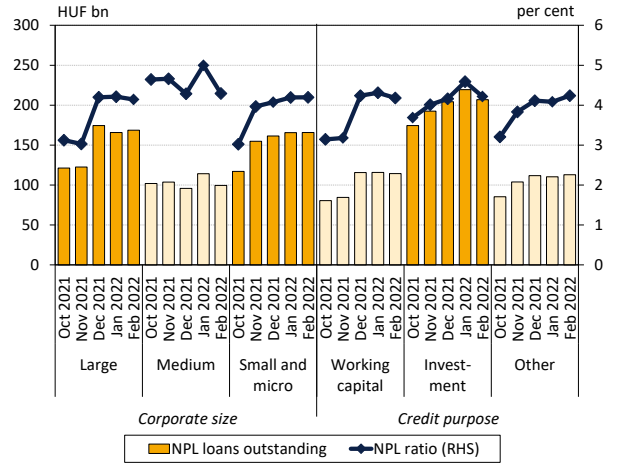
The ratio of non-performing corporate loans increased slightly in 2021 Q4 following the phasing out of the general moratorium. Corporate loans over 90 days past due declined by HUF 14 billion during 2021 (Chart 56). In parallel with that, compared to end-2020 the portfolio of loans that are not over 90 days past due, but are non-performing, increased by HUF 119 billion to HUF 355 billion. Three quarters of the increase took place after the phasing out of the general moratorium, in Q4, and thus the ratio of the portfolio less than 90 days past due rose to 82 per cent within the total non-performing corporate loan portfolio. The non-performing loan (NPL) ratio had declined steadily until March 2020 in parallel with the portfolio cleaning efforts, then, as a result of subsidy schemes and the payment moratorium it remained practically unchanged until 2021 Q3, amounting to 3.5 per cent. In 2021 Q4, however, the NPL ratio rose to 4.2 per

Chart 57: The credit institution sector's delinquent corporate loans according to the duration of delinquency



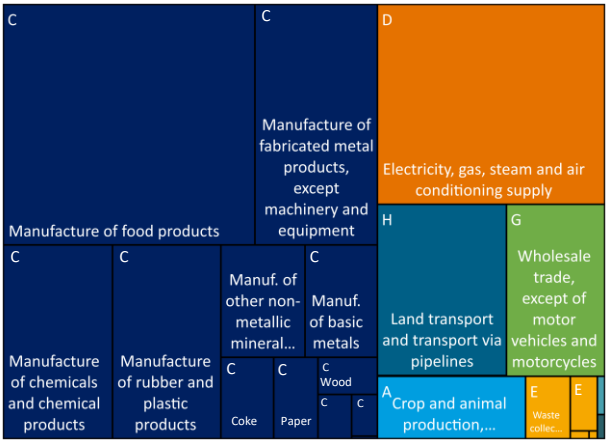
Source: MNB

Chart 58: Non-performing corporate loan ratio by the size of the company and loan purpose



Source: MNB

Chart 59: Loans outstanding of the sectors most affected by the increase in production costs



cent in parallel with an increase in the portfolio that is problematic but not over 90 days past due.

Most of the new December 2021 delinquencies ceased to exist in the corporate sector at the beginning of the year. Following the phasing out of the general moratorium, the MNB also monitored the developments in the portfolios less than 90 days past due. A major increase took place in the portfolio less than 90 days past due in December, when the portfolio of one-month delinquent loans increased by HUF 192 billion to HUF 330 billion (Chart 57). However, in January and February there were no further delinquencies for these loans.[32] In the credit institution sector, the corporate NPL ratio stood at 4.2 per cent in February, i.e. more than 3 months after the phasing out of the general moratorium.

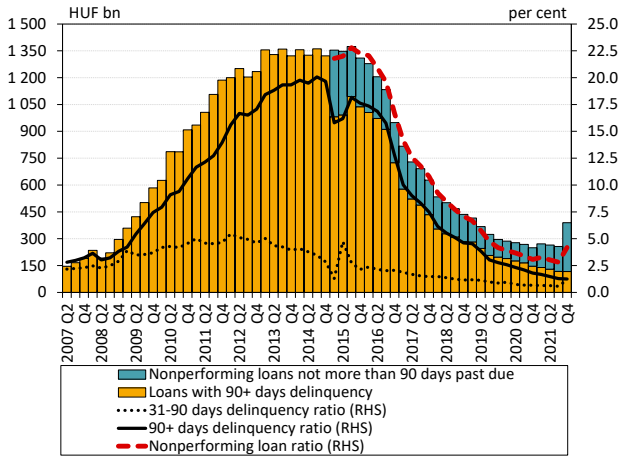
In the corporate sector, NPL ratios of loans to large corporations as well as to small and micro enterprises also increased. The non-performing loan portfolio expanded by HUF 102 billion between the phasing out of the general moratorium and February 2022. In terms of company size, HUF 53 billion and HUF 48 billion of the above increase relate to loans to SMEs and large corporations, respectively. In terms of loan purpose, investment loans, working capital loans and other loans amounting to HUF 35 billion, HUF 36 billion and HUF 31 billion, respectively, have become non-performing since October (Chart 58).

The increase in production costs may have a negative impact on the debt servicing ability of the most affected companies. The energy and commodity price increase that started at end-2021 and is continuing in 2022 affects companies to various degrees, so some commercial banks started to identify particularly sensitive activities. Companies with activities identified as risky by at least one of the banks have loans jointly amounting to HUF 2000 billion, corresponding to 20 per cent of the total corporate loan portfolio. From these, electric power generation, road transport of goods, wholesale of chemical products and other subsectors belonging to food production have major amounts of loans outstanding (Chart 59). Within this classification, chemical industry companies and companies that typically use base metal materials in their production are considered particularly sensitive, as these are the sectors whose output may be restrained the most by the sharp increase in production

[32] The fluctuation during the year of the portfolio less than 30 days past due is attributable to the changing economic environment as well as to corporate liquidity and cost optimisation developments.

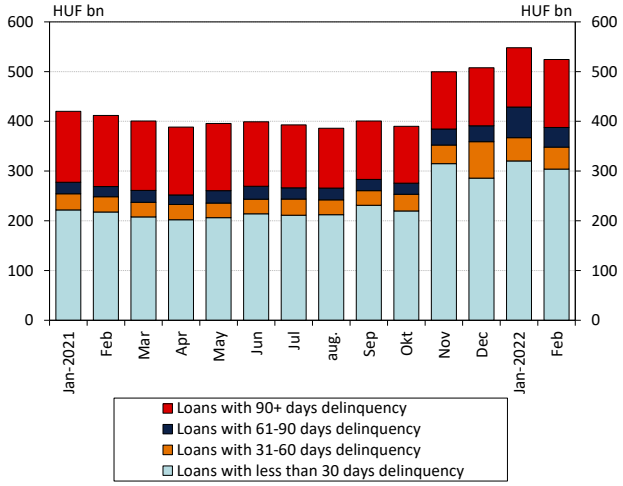
Note: The sectoral distribution of the affected stock of nearly HUF 2000 billion is proportionate to the individual areas. The code of the economic sector is in the top-left corner, and this gives the grouping too. Source: MNB

Chart 60: Ratio of non-performing household loans in the credit institution sector



Note: The definition of non-performing loans changed in 2015. From then on, in addition to the 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 clients until 2010 and by contracts from 2010. Source: MNB

Chart 61: The credit institution sector's delinquent household loans according to the duration of delinquency



Source: MNB

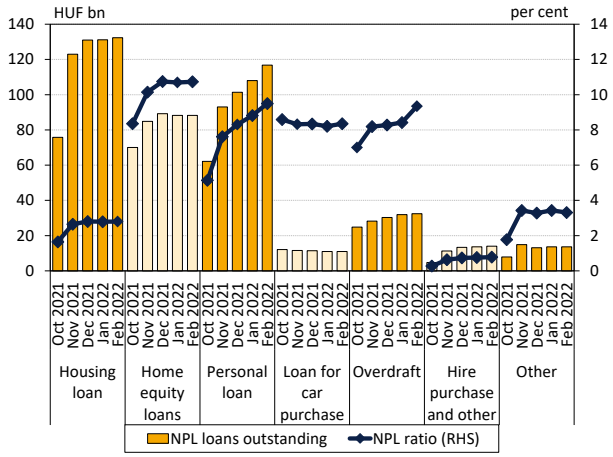
costs. Loans outstanding of the companies in these two latter groups amount to HUF 620 billion, i.e. 6 per cent of the total corporate loan portfolio.

The NPL ratio of household loans also increased in parallel with the rise in non-performing loans that are not over 90 days past due. During 2021, household loans 90 days past due fell by HUF 30 billion (Chart 60). Non-performing loans not over 90 days past due increased by HUF 171 billion year on year, 78 per cent of which took place in Q4. As a result of the latter increase, a shift took place in the composition of non-performing loans towards loans that are not over 90 days past due but are non-performing: while in the 6 years following the introduction of the currently valid definition of non-performance in 2015 their share was 30 per cent on average, in the last quarter of 2021 they accounted for 70 per cent of the non-performing portfolio, which latter amounted to HUF 390 billion. In 2021 Q3 the non-performing loan ratio declined to its historical low (2.8 per cent), which was also attributable to expanding lending, portfolio cleaning as well as the technical effect of the general moratorium that prevented defaults. In the last quarter of 2021, as a result of an increase in loans that were not over 90 days past due but were problematic, the NPL ratio rose by 1.4 percentage points, thus amounting to 4.2 per cent at end-December.

Three quarters of the household loans becoming delinquent in November started to repay again. In November 2021, newly delinquent loans less than 30 days past due increased by HUF 95 billion (Chart 61). The greater increase in newly delinquent loans may have been attributable to a one-off delinquency of debtors who became unused to the repayment routine, as well as to technical reasons.[33] This is corroborated by the fact that one third of these delinquencies became two months delinquent in December. Compared to October, loans over 90 days past due increased by HUF 22 billion by February, so the lower volume of those becoming three months delinquent indicates the temporary nature of the missing autumn repayments. Box 6 provides more detailed information regarding the characteristics of newly delinquent loans.

[33] A technical reason like that may be a data error or a delinquency stemming from an error in the IT system or from a settlement disruption (source: MNB Decree No 39/2016. (X.11) on prudential requirements relating to non-performing exposures and restructured receivables).

Chart 62: Ratio of non-performing household loans by product type



Source: MNB

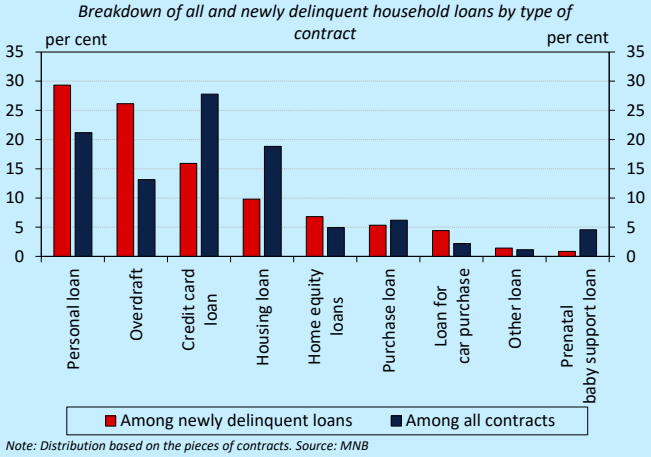
The portfolio impairment following the phasing out of the moratorium affected personal loans the most. The non-performing household loan portfolio rose by HUF 151 billion between the phasing out of the general moratorium and February 2022. In a breakdown by loan product, the ratio of non-performing loans increased for all loan types, except car purchase loans (Chart 62). The greatest increase was observed in the case of personal loans (by 4 percentage points to 9 per cent), followed by home equity loans (by 2 percentage points to 11 per cent). A smaller, 1.2 percentage point rise was observed in the case of housing loans in these four months, and thus the NPL ratio reached 2.8 per cent at end-February. In the credit institution sector, the household NPL ratio stood at 4.3 per cent in February, i.e. more than 3 months after the phasing out of the general moratorium.

BOX 6: FEATURES OF NEWLY DELINQUENT LOANS

The portfolio of delinquent loans, which are – for the time being – less than 90 days past due, increased with the phasing out of the moratorium. The volume of loans in the household and corporate segments delinquent for less than 3 months grew by HUF 121 billion and HUF 76 billion between October and February, respectively. Banks have reclassified some 20 per cent of these short delays into the non-performing category.

In the household segment, debtors recently leaving the moratorium constitute the majority of those who become newly delinquent. In the case of household loans, the ratio of those who become newly delinquent[34] – for at least one day – is 4 per cent. 61 per cent of these debtors have recently left the moratorium. By contract type, housing loans, prenatal baby support loans and credit card receivables are underrepresented *compared to their share within the population*[35]*;* personal loans (29%), overdrafts (26%), and credit cards (16%) represent the highest ratios within new delinquencies. The *household mortgage loans* that have become delinquent since September were typically borrowed prior to the debt cap rules (68%), and thus they are mostly loans with an interest rate fixation for up to 1 year (69%); 35 per cent of them are loans converted into forints. 4 per cent of the delinquent loans are subsidised HPS loans, while they account for 9 per cent of all outstanding loans. Accordingly, the chances of HPS loans falling delinquent are lower than the average.

Breakdown of all and newly delinquent household loans by type of contract



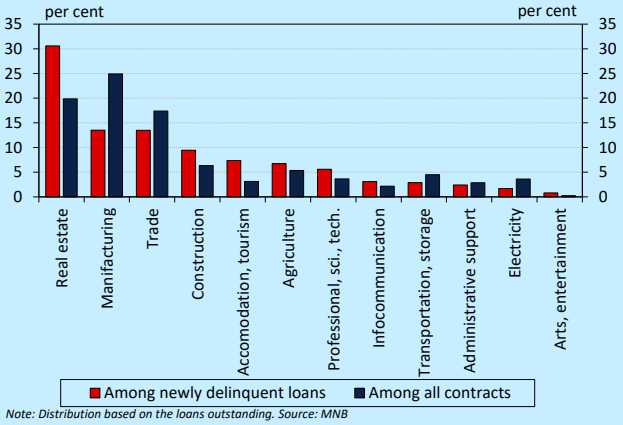
Note: Distribution based on the pieces of contracts. Source: MNB

[34] For both household and corporate loans, the time horizons examined are between September 2021 and February 2022, i. e. those who are newly delinquent are those who were not in delinquency in September, but were in delinquency in February.

[35] The results tend to be in line with the fact that the ratio of non-performing consumer loans is also typically higher.

In the corporate segment, debtors recently leaving the moratorium account for a third of those who become newly delinquent. Among corporate loans, the ratio of those newly becoming at least one day delinquent is 1 per cent on a volume basis, and 30 per cent of them have recently left the payment moratorium. By whole-economy sector, the loans of manufacturing, trading, transportation and energy companies had a lesser chance of becoming delinquent than what could be expected on the basis of their share in the total loan portfolio. Real estate (31%), manufacturing (14%), and trading (13%) companies represent the greatest weights among those that become newly delinquent.

Breakdown of all and newly delinquent corporate loans by sector



Note: Distribution based on the loans outstanding. Source: MNB

6.2. Loan loss provisioning for household sector loans increased

Most of the corporate loans in the moratorium, which account for a small portion of the portfolio, are classified in the riskier loan loss category. At end-2021, based on both number and volume, a mere 2 per cent of corporate loans were still in the payment moratorium introduced in relation to the coronavirus. 9 per cent of the loans in the moratorium are in the Stage 1 category, whereas each half each of the remaining portion is classified into Stage 2 and Stage 3 (Table 3).[36] 34 per cent of the loans in moratorium were classified into a riskier category in 2021 H2. 73 per cent of the loans not in moratorium are classified as Stage 1, 8 per cent of them were reclassified from Stage 1 into a higher-risk category in 2021 H2, but only 2 per cent of them transferred back to Stage 1 from Stage 2 or Stage 3.

Table 3: Movements of corporate loans among loan loss categories

Loans in moratorium					
In proportion to the corporate loan portfolio in moratorium		Impairment category 2021 Q4			
		Stage 1	Stage 2	Stage 3	Total
Impairment category 2021 Q2	Stage 1	9.2%	12.6%	2.5%	24.3%
	Stage 2	0.1%	33.2%	19.3%	52.6%
	Stage 3	0.0%	0.0%	23.0%	23.1%
	Total	9.3%	45.9%	44.8%	100.0%

Loans not in moratorium					
In proportion to the corporate loan portfolio not in moratorium		Impairment category 2021 Q4			
		Stage 1	Stage 2	Stage 3	Total
Impairment category 2021 Q2	Stage 1	70.6%	7.3%	0.2%	78.1%
	Stage 2	2.3%	16.3%	0.7%	19.3%
	Stage 3	0.0%	0.0%	2.5%	2.6%
	Total	73.0%	23.6%	3.5%	100.0%

Note: Credit institutions' data. Ratios on the basis of outstanding amounts at the end of 2021 Q4. Source: MNB

Table 4: Movements of household loans between loan loss categories

Loans in moratorium					
In proportion to the household loan portfolio in moratorium		Impairment category 2021 Q4			
		Stage 1	Stage 2	Stage 3	Total
Impairment category 2021 Q2	Stage 1	2.1%	26.3%	7.3%	35.8%
	Stage 2	0.0%	36.9%	18.4%	55.3%
	Stage 3	0.0%	0.3%	8.6%	8.9%
	Total	2.1%	63.5%	34.3%	100.0%

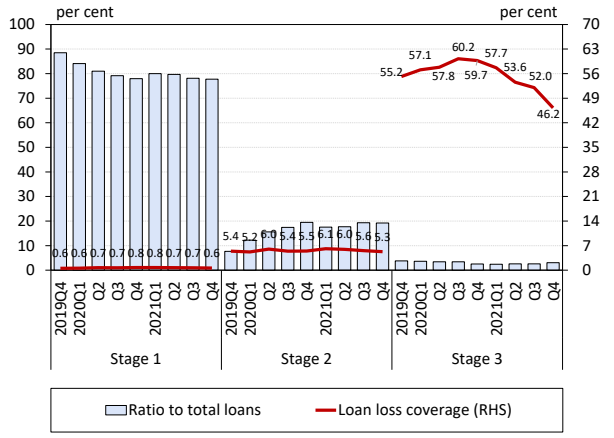
Loans not in moratorium					
In proportion to the household loan portfolio not in moratorium		Impairment category 2021 Q4			
		Stage 1	Stage 2	Stage 3	Total
Impairment category 2021 Q2	Stage 1	71.6%	4.4%	0.2%	76.2%
	Stage 2	3.4%	17.5%	0.3%	21.3%
	Stage 3	0.0%	0.2%	2.4%	2.6%
	Total	75.1%	22.0%	2.9%	100.0%

Note: Credit institutions' data. Ratios on the basis of outstanding amounts at the end of 2021 Q4. Source: MNB

98 per cent of household loans in moratorium are at an elevated risk level. At end-2021, 6 per cent of household loans outstanding were in the payment moratorium introduced in connection with the coronavirus. Two thirds of the outstanding loans in moratorium are classified in the Stage 2 category, which represents elevated risk, and one third in the Stage 3 category (Table 4). Half of the loans in moratorium were put into a higher loan loss category in 2021 H2. For loans not in moratorium, three quarters of the loans outstanding are problem-free, classified in Stage 1. During H2, at portfolio level, the classification into riskier loan loss categories was almost identical with the ratio of loans whose risk classification improved, and thus there was no major change in the

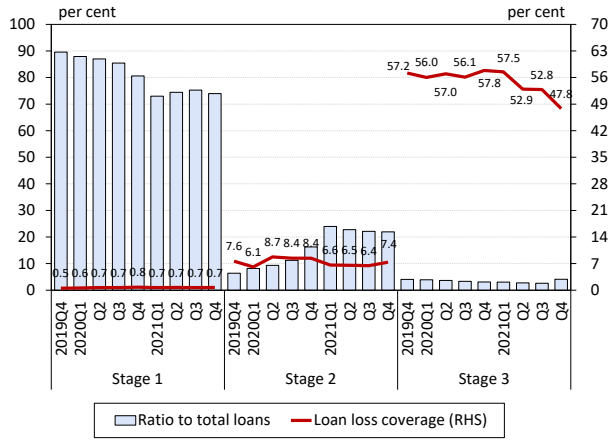
[36] Stage 1: loan loss provisioning for financial assets whose credit risk has not increased significantly since initial recognition. Stage 2: loan loss provisioning for financial assets whose credit risk has increased significantly since initial recognition, but no event has occurred objectively causing credit loss. Stage 3: loan loss provisioning for non-performing financial assets.

Chart 63: Distribution of the corporate loan portfolio by Stage categories and loan loss coverage



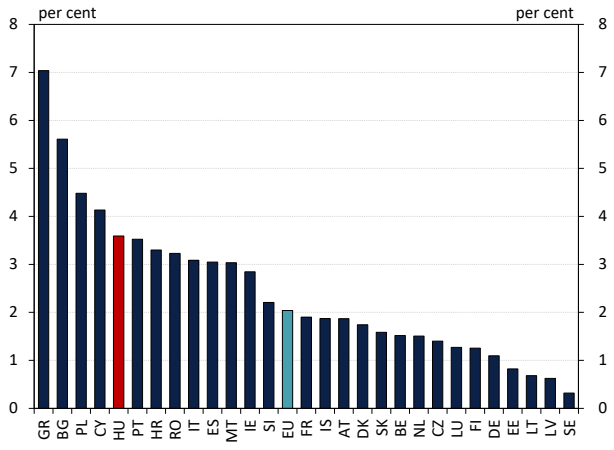
Source: MNB

Chart 64: Distribution of the household loan portfolio by Stage categories and loan loss coverage



Source: MNB

Chart 65: Ratio of non-performing loans in an international comparison



Note: Data refers to December 2021. EBA data are based on a sample consisting of 131 banks. Based on not consolidated data. Data for Hungary based on four banks. Source: EBA

ratios of the individual Stage categories. Box 7 provides more information regarding the characteristics of loans remaining in the moratorium.

Loan loss provisions for corporate loans remained unchanged, the average coverage of Stage 3 loans declined. Loan loss provisions of the credit institution sector's corporate loan portfolio amounted to HUF 339 billion at end-December 2021, corresponding to a decrease of 2 per cent compared to end-2020. Loan loss provisions were reduced by HUF 55 billion by phase-outs and write-offs, while they were increased by HUF 8 billion by the assessment of credit risks and by HUF 47 billion via loan loss provisions related to origination and purchase. As a result, at end-December 2021 the average coverage of loans amounted to 1 per cent for Stage 1 loans, 5 per cent for Stage 2 loans and 46 per cent for Stage 3 loans (Chart 63).

Loan loss provisions for household loans increased considerably, but the average coverage of Stage 3 loans declined. Compared to end-2020, loan loss provisions of the household loan portfolio in the credit institution sector rose by 28 per cent to HUF 320 billion by December 2021. Loan loss provisions were reduced by HUF 35 billion by phase-outs and write-offs, while they were increased by HUF 77 billion by the assessment of credit risks and by HUF 24 billion because of loan loss provisions related to origination and purchase. New loan loss provisioning was greater on loans that remained in moratorium after October; the nature of the extension targeting vulnerable debtors and the supervisory recommendation issued in relation to that may also have contributed to this. Accordingly, at end-December 2021, the average coverage of loans in categories Stage 1, 2 and 3 amounted to 1 per cent, 7 per cent and 48 per cent, respectively (Chart 64).

6.3. Loan loss coverage is high by European comparison

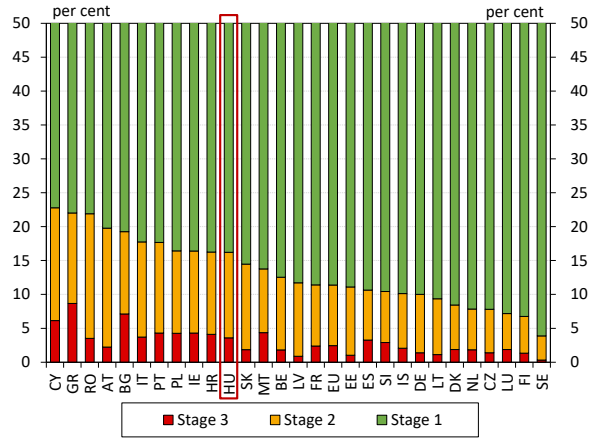
The ratio of non-performing loans in Hungary continues to exceed the EU average. According to December 2021 data of banks examined by the European Banking Authority (EBA), the non-performing loan ratio of 3.6 per cent in Hungary is the 5th highest among the 28 EU member countries (Chart 65). This ratio exceeds the EU average by 1.6 percentage points. In the ranking of countries, the southern as well as the CEE countries that joined later typically have high NPL ratios, while western and northern Member States have lower ratios. These are

considered to be legacies of the 2008–2009 economic and even more of the 2011–2012 European sovereign debt crises. Exceptions from the typical values for the CEE region are two V4 countries, Slovakia and the Czech Republic, where the non-performing ratio is below 2 per cent.

Following the phasing out of the payment moratorium, improvements was observed in the risk categories of loans outstanding in the EU Member States. The quality of the loan portfolios improved in the majority of European countries in 2021 H2. The Stage 3 loan portfolio declined or stagnated in all the EU Member States, and the Stage 1 portfolio also increased in the majority of Member States. In terms of the risk classification of loans outstanding, Hungary is middle-ranked in the European Union (Chart 66). Hungary has the 10th largest Stage 3 credit impaired portfolio, and the 18th largest Stage 1, low-risk portfolio. The EU average in terms of the Stage 3 ratio is 2.4 per cent, compared to which the figure for Hungary is 1.2 percentage points higher, while in the Stage 1 category the EU average is 88.6 per cent, compared to Hungary which is 4.8 percentage points lower. As for the V4 countries, the risk classifications of loans outstanding are healthier in the Czech Republic and Slovakia, and riskier in Poland than in Hungary.

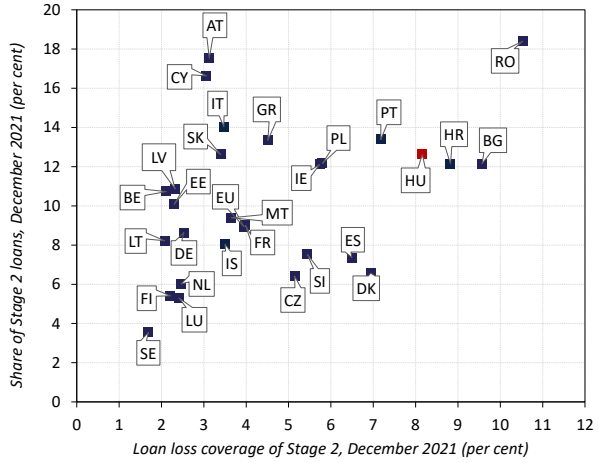
Loan loss coverage of Stage 2 loans in Hungary continues to be among the highest in Europe. The pandemic entailed major changes in the loss coverage of the loans that were becoming riskier; the coverage of Stage 2 loans increased in the European Union as banks reacted to the elevated risks. At end-2021, the coverage of Stage 2 loans was the fourth highest in Hungary among EU countries, behind the coverage ratios of Romania, Bulgaria and Croatia, and the highest among the V4 countries (Chart 67). This can mainly be explained by the more conservative regulation in Hungary. The domestic value exceeds the EU average of 3.9 per cent by 4.2 percentage points. It is important to note that the differences in coverage across countries may be explained to a great degree by composition effects, such as the differences between the shares of the household and corporate sectors.

Chart 66: Distribution of loans outstanding according to Stage categories



Note: Data refers to December 2021. EBA data are based on a sample consisting of 131 banks. Based on not consolidated data. Data for Hungary based on four banks. Source: EBA

Chart 67: Loans classified as Stage 2 and their loan loss coverage in an international comparison



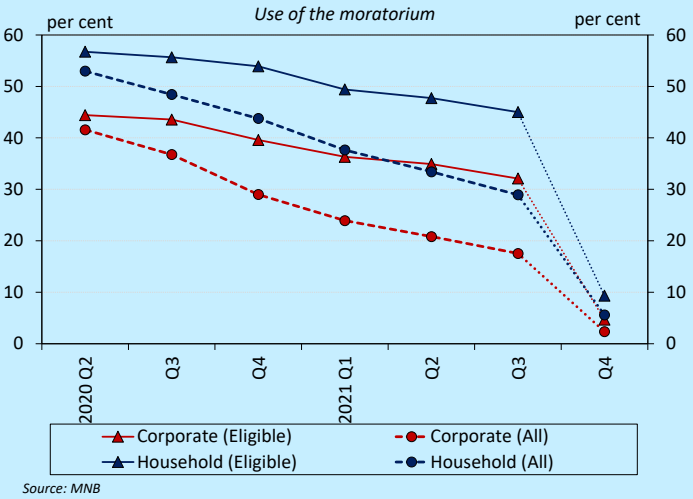
Note: EBA data are based on a sample consisting of 131 banks. Based on not consolidated data. Data for Hungary based on four banks. Source: EBA

BOX 7: RISK CHARACTERISTICS OF DEBTORS THAT REMAINED IN MORATORIUM

The general payment moratorium between March 2020 and October 2021 is being continued in a narrower format from November 2021 until June 2022. In the household segment, pensioners and those bringing up children as well as clients experiencing a decline in income may have recourse to the payment moratorium, while companies whose sales revenues are down at least 25 per cent can use it.

5 per cent of the household loan portfolio was in moratorium in February. When the general payment moratorium was phased out in November 2021, 6 percent of the outstanding loan portfolio continued to have suspended repayments, but with the increase in new lending and due to those who left the moratorium, the share of the portfolio in moratorium decreased further. 50 per cent are housing loans of the approximately HUF 460 billion portfolio affected by the moratorium, personal loans account for 23 per cent, and the share of home equity loans is 18 per cent, thus these three products account for more than 90 per cent of the loan portfolio in moratorium in February.

Compared to loans outside the moratorium, the mortgage loans in moratorium are higher amounts with longer residual maturities and slightly higher repayment instalments. Almost three quarters of home equity loans and 35 per cent of housing loans that remained in moratorium are variable-rate loans. The average principal debt of housing loans and home equity loans affected by the moratorium amounts to HUF 8.1 million and 5.9 million, respectively. 14 years and 11 years of residual maturity are typical of the two groups, respectively. 24 per cent of the housing loans and two thirds of the home equity loans that remained in moratorium are contracts concluded prior to the introduction of the debt cap rules. The personal loans in moratorium have an average debt amount of HUF 1.9 million and average residual maturity of 4.5 years, which are slightly higher than the figures for the clients not in moratorium. All the loans concerned were borrowed after 2015, in compliance with the debt cap rules.



Source: MNB

In the corporate sector, the share of the loan portfolio in moratorium is 2 per cent. Investment loans account for two thirds of the loans in moratorium (while within the total loan portfolio, their share is 45 per cent): within these loans, participation in the moratorium is twice as high as the ratio within working capital and other loans outstanding. **In the commercial real estate segment, mostly the loans granted for hotel financing are in moratorium.** In the case of project loans with a commercial real estate purpose, which are considered riskier, 3.2 per cent of the portfolio, corresponding to HUF 52 billion, participated in the moratorium at end-February 2022. Most of the commercial real estate project loans affected by the repayment moratorium were loans extended for hotel financing, accounting for 10 per cent of the total hotel financing project loans outstanding. In the end-February data, in addition to hotel loans, it is the project loans granted for the financing of residential parks where a significant, 11 per cent participation ratio is seen. For the other commercial real estate segments (offices, shopping centres, industrial/logistics) the participation ratio is very low.

The risk of the loans in moratorium may be higher in the household and corporate segments as well compared to the loans of clients who opted to continue repayments, but the risks cannot be considered systemically high. Looking ahead, increased monitoring of the loan portfolio affected is justified, while making direct contact with clients and formulating individual, tailor-made proposals may be expedient to reduce risks further.

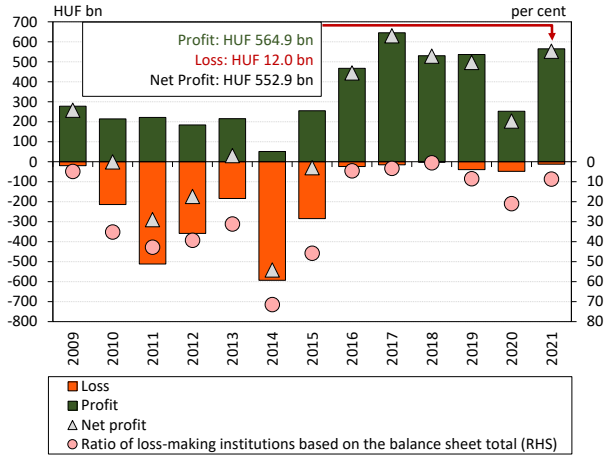
7. Profitability and capital position: downside risks in profitability, strong capital position

The after-tax profit of the credit institution sector amounted to HUF 553 billion on a non-consolidated basis in 2021, which exceeds the profit of 2019, the year preceding the coronavirus pandemic, by 11 per cent and corresponds to an increase of HUF 349 billion year on year. The consolidated profit, which includes the profits of domestic and foreign subsidiaries as well, amounted to HUF 815 billion. Higher net interest income and the decline in risk costs were the main contributors to the increase in profits in 2021. The growth in net interest income was driven by the increasing net interest income of deposits and securities. Although the consolidated 12.8 per cent RoE of Hungarian credit institutions was the highest across EU countries in 2021 Q3, the Russia–Ukraine conflict may be a drag on the profitability of the sector.

The banking sector's consolidated capital adequacy ratio reached 18.6 per cent at the end of the year, a decline compared to June, but an increase of 29 basis points compared to the same period of the previous year. The CET1 ratio reached 16.6 per cent in the same period. On a semi-annual basis, changes in the indicator were determined by the inclusion of the interim profit into own funds and by the surge in the total risk exposure amount observed in Q3. The sector's free capital above the overall capital requirement amounted to HUF 1631 billion (5.3 per cent), while together with the total annual profit, which – for lack of auditing – was not yet eligible for inclusion in the own funds, and taking into account the easing of the 2.5 per cent capital conservation buffer effective until June 2022, it totalled HUF 2900 billion (9.5 per cent). The capital position of the institutions was adequate even taking into consideration the dividend payouts due in 2022 and capital requirements, while the banks' leverage ratio exceeded 4 per cent in almost all cases and even 6 per cent for three quarters of the sector.

7.1. Recovering profitability overshadowed by geopolitical risks

Chart 68: After-tax profit and loss of the credit institution sector

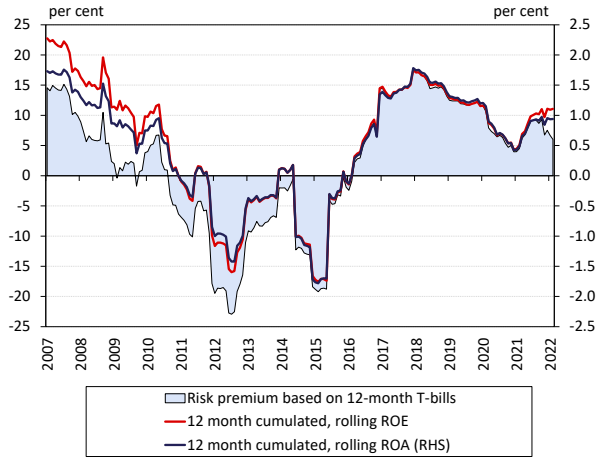


Note: At the end of 2021, the ratio of loss-making institutions in terms of total assets was 3 per cent based on consolidated data. Source: MNB

The after-tax profit of the credit institution sector in 2021 exceeded the level of the year preceding the pandemic. In 2021, based on non-consolidated data, the credit institution sector generated after-tax profits of HUF 553 billion, which exceeded the profits of 2019, the year preceding the coronavirus pandemic, by 11 per cent, and corresponds to an increase of HUF 349 billion year on year (Chart 68). The improvement in profitability affected a wide range of institutions. As a result, the ratio of individual loss-making institutions based on total assets declined from 21 per cent at end-2020 to 8.6 per cent by end-2021. The consolidated profit including the profits of domestic as well as foreign subsidiaries was HUF 815 billion in 2021, corresponding to annual growth of HUF 433 billion. In the same period, the profit of financial corporations increased by HUF 44 billion to HUF 152 billion.

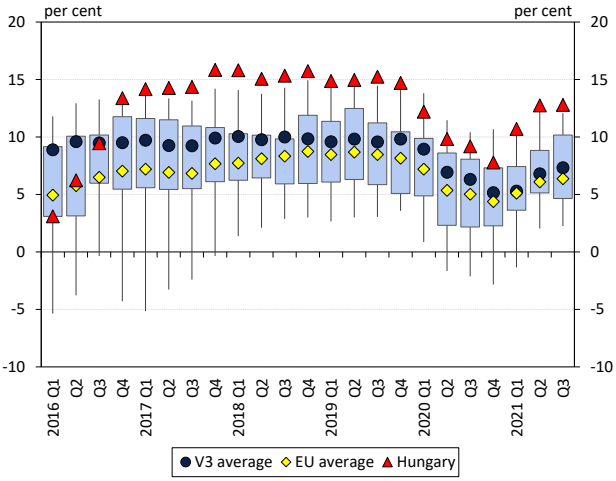
Profitability indicators have not reached the pre-pandemic level yet, and the increasing interest rates have reduced the sector's yield premium as well. By end-2021, the sector's 12-month rolling return on equity (RoE) and return on assets (RoA) increased by 6.7 percentage points to 11 per cent and by 53 basis points to nearly 1 per cent, respectively. The difference in dynamics of the two

Chart 69: After-tax 12-month rolling ROE and ROA of credit institutions



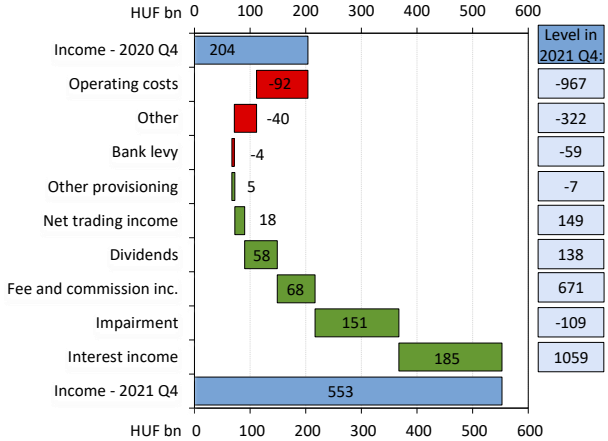
Note: Monthly time series based on non-consolidated data.
Source: MNB

Chart 70: Distribution of EU credit institution sectors by 12-month rolling after-tax return on equity



Note: Quarterly time series based on consolidated data. Vertical line: 10-90 per cent range, rectangle: 25-75 per cent range. Source: ECB CDB

Chart 71: Annual changes in the after-tax income components of the credit institution sector



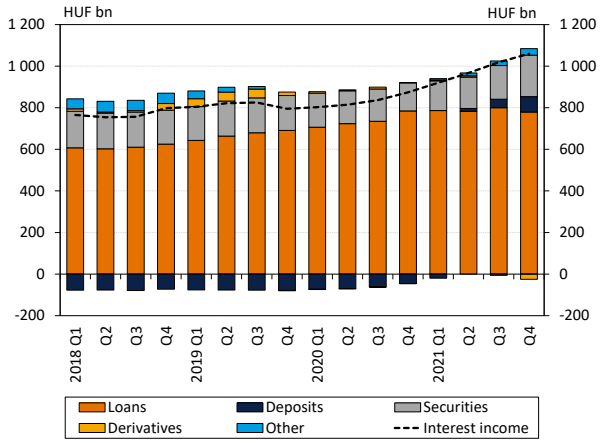
Note: Nominal values of income components at the end of 2021 are shown on the right-hand side. Source: MNB

indicators is explained by the increasing leverage, i.e. the growing ratio of the banking sector's total assets and equity. Although the nominal level of after-tax income already exceeds 2019 by 11 per cent, since then the average total assets and the average equity have expanded by 40 per cent and nearly 16 per cent, respectively, and therefore the RoE and RoA indicators still fall short of their pre-pandemic levels of 11.6 per cent and 1.2 per cent, respectively (Chart 69). The rising interest rate environment significantly eroded the premium on the risk-free yield of the return on equity as well. At end-2019, the yield premium of the credit institution sector still corresponded to the 11.6 per cent RoE, but by end-2021 this figure was down to 7.5 per cent as a result of a rise in short-term yields.

In 2021, the profitability of Hungarian credit institutions was the highest across EU countries, but the Russia–Ukraine conflict may be a drag on the profitability of the sector. Although the consolidated 12-month rolling after-tax return on equity (RoE) of Hungarian credit institutions declined sharply during the pandemic period, steadily approaching the European and regional averages, the RoE of 12.8 per cent in 2021 Q3 is again the highest among EU countries (Chart 70). In EU member countries, the average 12-month RoE amounted to 6.4 per cent, while it was 7.3 per cent in the countries of the region at end-September 2021. At the same time, profitable operations in Russia and Ukraine also contributed to the consolidated profit of the Hungarian banking sector, which poses a major risk in the short run already.

Higher net interest income and the decline in risk costs were the main contributors to the increase in profits in 2021. The expansion in interest income and the lower net loan loss provisioning contributed to the HUF 349 billion increase in the 2021 after-tax profit by some HUF 185 billion and HUF 151 billion, respectively (Chart 71). The change in net interest income was attributable to a strong increase in interest incomes, which is greatly attributable to the balance sheet expanding effect of the measures taken by the government and the central bank to expand liquidity and encourage lending. The surge in central bank rates in Q4 resulted in further additional interest income for the sector, while interest expense on deposits on the liabilities side increased only moderately (Box 2). Although impairment of more than HUF 70 billion was recognised at banking sector level in 2021 Q4, the net impairment of HUF 109 billion for 2021 as a whole is still well below the HUF 260 billion recorded a year earlier. At the same time, due to the unfavourable real economic effects of the Russia–Ukraine conflict, impairment in the coming periods is not

Chart 72: Changes in components of 12-month rolling interest income in the credit institution sector



Note: Based on non-consolidated data. In all cases the chart shows the difference between interest incomes and interest expenses from the given instrument. Source: MNB

Table 5: Changes in the portfolio of debt securities at fair value through other comprehensive income (FVOCI) and the impact of their revaluation in total equity

(HUF billion)	31.12.2020	31.12.2021	annual change
Debt securities (AC)	8 016	10 602	2 586
Debt securities (FVOCI)	**4 070**	**2 834**	**-1 236**
Capital	1 297	1 435	138
Accumulated other comprehensive income	101	-90	-190
- fair value changes of debt securities	*71*	*-47*	*-117*
- cash flow hedges reserve	*19*	*-58*	*-77*
Retained earnings	2 451	2 669	218
Profit for the financial year	207	553	346
Other capital and reserves	1 096	1 102	6
Total Equity	**5 152**	**5 670**	**518**

Note: Based on non-consolidated data. AC: amortised cost, FVOCI: fair value through other comprehensive income. Source: MNB

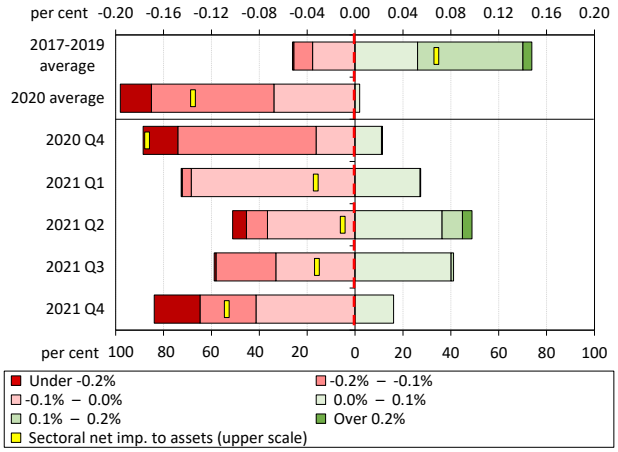
expected to improve profit any longer. Fee and commission income also saw a remarkable annual increase of HUF 68 billion (11.3 per cent), which may have been attributable to economic activity, lending, and payments reviving due to the easing of the coronavirus pandemic. It was only the rise in operating costs that pointed to a deterioration in profitability, with totalling HUF 92 billion, the main underlying reason for which is that following stagnation in 2020, employee expenses, which account for almost half of operating costs, expanded by nearly 9 per cent. At the same time, the extraordinary payment imposed by the National Deposit Insurance Fund due to the liquidation of Sberbank's Hungarian subsidiary will worsen the sector's 2022 results by HUF 75 billion.[37]

The growth in net interest income was driven by the increasing interest income of deposits and securities. As a result of the rising interest rate environment, through the higher interest rates on central bank deposits, the net interest expense usually realised on deposits became positive in 2021, increasing the net interest income by nearly HUF 120 billion year on year (Chart 72). The remaining part of the expansion in interest income was provided by higher interest income attained on the greater holdings of government securities and corporate bonds. This interest income exceeded the figure for 2020 by HUF 64 billion. By contrast, net interest income on loans practically stagnated in 2021, whereas the interest rate stop measure introduced for household mortgage loans as of January 2022 may decelerate the expansion in interest income.

The rising interest rate environment reduced the sector's equity through a revaluation of debt securities. Most of the debt securities in the balance sheet of the banking sector are fixed-rate, and thus their net present value is declining amidst the rising interest rate environment. Depending on the accounting classification of the security, this repricing effect may be reflected in the profit/loss or in the capital as well. Although the vast majority of the debt securities portfolio is valued at amortised cost, which is not affected by the repricing, a significant portion worth more than HUF 2800 billion at end-2021 belonged to the category fair value through other comprehensive income (FVOCI), whose repricing reduced the capital of the banking sector by HUF 117 billion (Table 5). The rising interest rate environment initially causes a loss through the revaluation of assets measured at fair value, but in the medium

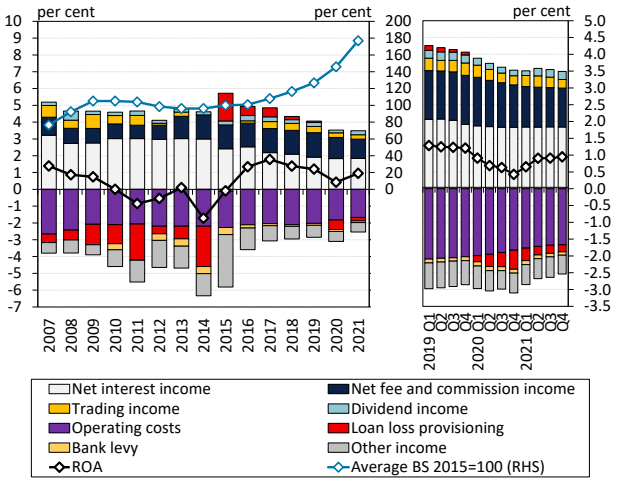
[37] The income effect of the extraordinary payment may be reduced by the proceeds from the sale of bank's assets.

Chart 73: Total-asset-weighted distribution of credit institutions by net impairment to assets ratio



Note: Green categories represent net reversal of impairment, while red categories represent net recognition of impairment. Source: MNB

Chart 74: Changes in 12-month rolling income components relative to total assets in the credit institution sector



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

term, due to the increase in asset-side cash flows, it is estimated to increase the profit of the banking system (Box 8).

The surge in recognition of impairment in Q4 was mostly related to loans in moratorium. Although by June 2021 the reversal of impairment in net terms on a total asset basis became typical of half of the credit institution sector, in 2021 Q4 the vast majority of the institutions were characterised by net impairment recognition again (Chart 73). In that quarter the net impairment to assets ratio of the credit institution sector was close to its 2020 average. A greater portion of the additional loan loss provisioning was on the loans in moratorium, which may have been attributable to the targeted nature of the moratorium extension, aimed at vulnerable debtors, as well as to the MNB's guidance in connection with the recognition of impairment related to the moratorium.

In spite of the outstanding balance sheet dynamics, return on assets improved considerably in 2021. The central bank and government measures – supporting liquidity – related to the coronavirus pandemic contributed significantly to the 21 per cent year-on-year increase in the 2021 sector-level average total assets. In December 2021, the 12-month rolling return on assets (RoA) was nearly 1 per cent, which is not a major change compared to June, but it significantly exceeds the level observed one year before, by more than 50 basis points (Chart 74). The 37 basis point decline in impairment and provisioning as a percentage of total assets and the 16 basis point decrease in operating costs were the main contributors to the rise in the indicator. Nevertheless, the 12-month net interest income – which considerably increases nominal income – stagnated as a percentage of total assets, as the expansion in this income component roughly corresponded to the annual growth in the average balance sheet total.

BOX 8: IMPACT OF INTEREST RATE RISE IN 2021 H2 ON BANKING SECTOR PROFITABILITY AND CAPITAL

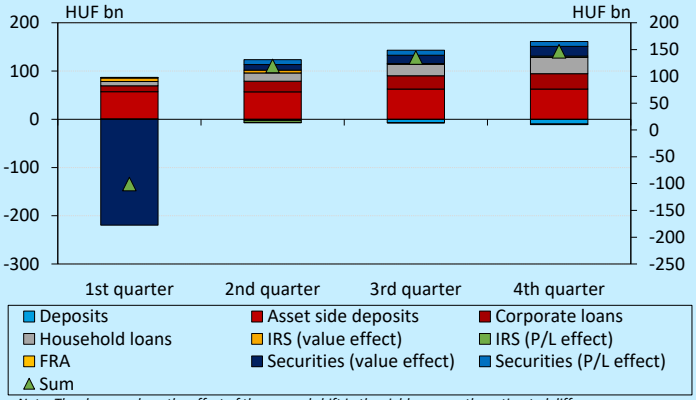
During the monetary policy tightening cycle, the central bank monitors the impact of variable rates on bank profitability and capital in its macroprudential analyses. The rise in the forint interbank and government securities market yield curve in 2021 H2 produces immediate effects and ones that last several years on the profitability and capital of the banking sector, and mapping these effects is a complex task. The calculations during the modelling were based on end-June 2021 transaction-level data available on the basis of banks' data reporting; the effect of the increase in the interest rate was quantified with a projection for one year. In the period under review, the three-month BUBOR and the yield of ten-year Budapest interest rate swaps (BIRS) rose by 316 basis points and 180 basis points, respectively, while government security yields with the same maturities increased by 171 basis points and 168 basis points, respectively.

The model used examines the impact of the rise in interest rates applying various simplified assumptions, and thus it rather helps understand the effect mechanism of interest rate changes than the forecasting of banking sector profitability. The rise in interest rates entails a number of endogenous changes (credit risk, exchange rate, demand, monetary policy toolkit, etc.), whose effects were not examined in this model, and which – in view of their complexity – may either strengthen or weaken one another in terms of bank profitability. It is also important to emphasise that our findings examine the effects of an immediate interest rate shock using simplified balance sheet assumptions, and thus they do not include the impact on profitability of daily bank decisions made during the adjustment to the external environment. In our calculations the volume of new lending corresponds to that of our aggregate loan forecast, while its composition corresponds to the structure of loans disbursed in the past year. The deposit portfolio also corresponds to the aggregate loan forecast in the model (assuming an unchanged loan-to-deposit ratio), and the structure of the new portfolio is the same as that of the initial deposit portfolio. In the case of new loans the change in the yield curve feeds through completely into the lending rates, whereas in the case of deposits the half-year change gathered from the aggregate interest rate statistics was taken as the basis, and this change shows a moderate pass-through of the interest rates in the period under review. For securities, derivatives and asset-side deposits we assumed a renewal of maturing transactions with interest rates in line with the change in the yield curve, but according to the same characteristics.

In our model, the accounting classification of each balance sheet item fundamentally determines the extent to which the change in the yield curve affects the individual income components over time. In the case of balance sheet items recorded at amortised cost, a change in the yield curve can only modify the cash flow of the given item, and even that is only possible if there is repricing over the one-year period under review. For balance sheet items recorded at fair value, a change in the yield curve results in an immediate revaluation of the given item through the change in discount factors. In addition, it is important to take into account that as the balance sheet value of the items valued at fair value converges on the nominal value as the maturity approaches, the profit-reducing effect of the immediate revaluation declines as time goes by.

According to our estimate, sharply rising interest rates initially entail major losses for the banking sector through the revaluation of assets valued at fair value, but thanks to the increase in asset-side cash flows, the impact of the rise in the yield curve turns into bank profit from the third quarter onwards. The interest rate increase may cause losses for the banking sector amounting to some HUF 219 billion through the immediate revaluation of the securities stock valued at fair value, and the net long position of the banking-sector interest rate swaps is only able to offset these losses to a lesser degree, by less than HUF 8 billion. The aggregate impacts reflected in profit/loss and capital still show a loss of HUF 23 billion in H1, but this turns into a profit of HUF 246 billion by the end of the one-year period under review. The effect of the interest rate hike improving bank profitability is attributable to the greater repricing of loans compared to deposits as well as to the banking sector's interest income from its asset-side deposits thanks to its ample liquidity.

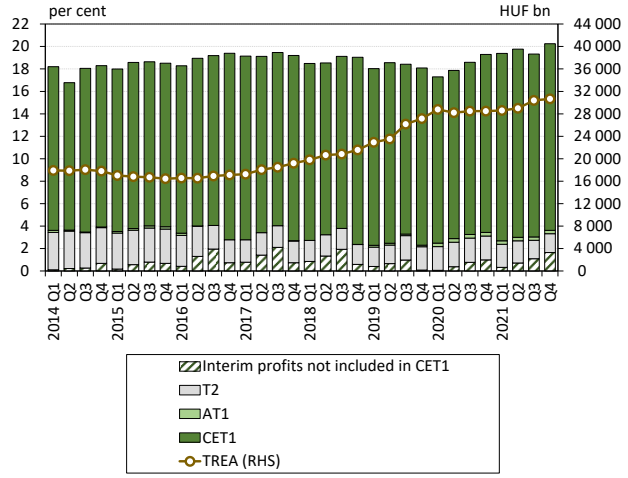
Changes in the four-quarter forecasts of the banking system's profit and capital according to the central bank's model based on the change in the interbank yield curve in the second half of 2021



Note: The changes show the effect of the upward shift in the yield curve as the estimated difference between the cash flow and revaluation effects between the baseline and the upward shift in the yield curve. Source: MNB

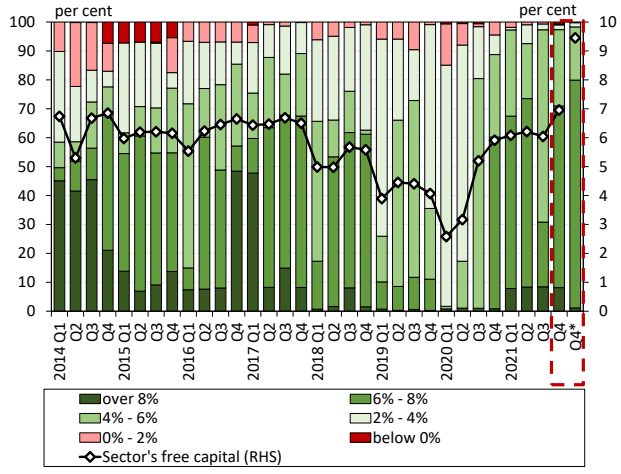
7.2. The capital position of the sector is adequate, even considering the reintroduced requirements

Chart 75: Consolidated capital adequacy and total risk exposure amount of the banking sector



Source: MNB

Chart 76: Distribution of banks by level of free capital over the overall capital requirement weighted by the TREA



Note: Free capital includes the total interim or year-end profits as well. Q4* shows values calculated based on Pillar 2 Requirements effective from the beginning of 2022 and the combined buffer requirement to come into effect in June 2022, and it also takes into account capital increases and dividend payouts planned for 2022. The categories indicate the level of own funds above the overall capital requirement as a ratio of the total risk exposure amount. Source: MNB

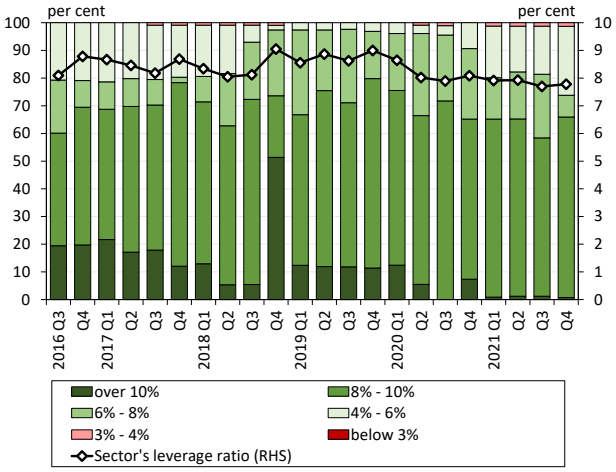
Despite the slight decline, the banking sector's capital adequacy implies a strong shock-absorbing capacity. Compared to the record level reached in June, the sector's consolidated capital adequacy ratio (CAR) decreased slightly in 2021 Q3, before increasing to 18.6 per cent in the last quarter, exceeding the value seen one year earlier by 29 basis points (Chart 75). The CET1 ratio was 16.6 per cent. The decline in Q3 was primarily attributable to the accelerated increase in the total risk exposure amount (TREA), attributable mainly to larger institutions, more than half of which was related to the corporate segment. In Q4, this dynamic was offset to a great degree by the decline in the exposure amount of other segments and market risk. Own funds were affected by the gradual inclusion of the outstanding annual profit in the course of the year, the improvement in other comprehensive income stemming from the conversion of foreign currencies, as well as other technical effects (repurchase and subsequent selling of stocks). Calculating with the total profit, which – for lack of auditing – was not yet eligible for inclusion in the own funds, sector-level capital adequacy amounted to 20.2 per cent. However, in light of banks' dividend payout plans, this profit will not completely strengthen the sector's capital position.

Taking the dividend payout plans into account as well as the reintroduction of capital requirements, satisfactory free buffers are available for the institutions. As a result of the rise in the CAR, free capital as a proportion of the TREA corresponded to 5.3 per cent at sector level and HUF 1631 billion in nominal terms (Chart 76). Calculating with the easing of the 2.5 per cent capital conservation buffer (CCoB), included in the overall capital requirement (OCR) in December, yet not mandatory until end-June 2022, free capital is estimated to amount to HUF 2398 billion, while the interim profit potentially increases the buffer by a further HUF 503 billion at most. In a breakdown by institution, free capital is rather concentrated, and although some small institutions operate with low capital adequacy,[38] most of the actors in the sector have a strong capital position. The picture is further refined by the gradual reintroduction of the CCoB in 2022 H2 and the capital buffer of systemically important institutions (O-SII) starting from 1

[38] Taking the total CCoB requirement into account, two small institutions exhibited a temporary shortage of capital at end-2021.

January 2022,[39] as well as by taking into consideration this year's Pillar 2 requirement and dividend payout plans based even on 2019 profits in certain cases. Taking account of these factors and some capital increase plans implemented in Q1, expressed in terms of the total TREA, around 98 per cent of the sector have buffers exceeding 4 per cent. At present, most of the institutions meet the MREL requirements valid in 2022; the need for raising a greater volume of MREL-eligible external funding became due in the case of one bank.

Chart 77: Distribution of total exposure measure 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. the ratio of the T1 capital to the total leverage ratio exposure measure. For 2020 Q3, data are only available for 75 per cent and 84 per cent of the sector based on the number of banks and the total exposure measure, respectively. Source: MNB

The sector safely meets the leverage ratio requirement. As of June 2021, meeting the 3 per cent leverage ratio requirement also became mandatory for banks. As has been the case continually since the data reporting started in September 2016, all institutions complied with the requirement at end-2021 (Chart 77). The major expansion in the sector's balance sheet total following 2020 Q1 is reflected in the denominator of the indicator, but it was coupled with a similar rise in the numerator. As a result, the sector's leverage ratio was stable in the past quarters, and in December, expressed in terms of the total exposure measure, nearly 74 per cent of the sector had a ratio above 6 per cent. In the case of two small institutions, the ratio has been fluctuating between 3 and 4 per cent since early 2021.

[39] During the entire pandemic the CCoB was part of the OCR, but its violation temporarily did not trigger any of the statutory sanctions.

8. Banking sector stress tests: free buffers above requirements even amidst economic uncertainty

In the stress scenarios, the banking sector's liquidity surplus was down considerably during the past three quarters, but according to the liquidity stress test, the sector would meet the requirements even in the case of a significant shock. As a result of a decrease in banks' LCR indicators, the presumed shocks of the liquidity stress test per se cause a poorer distribution of the indicators compared to the results of the autumn 2021 stress test. However, taking banks' adjustment opportunities into account, only one institution would have a problem with meeting the requirements. In terms of shocks, deposit withdrawals continue to have the strongest potential effect, the increase in which exceeded the level of expansion in deposits in the past quarters.

Over the two-year horizon of the solvency stress test, the macroeconomic environment is primarily determined by monetary tightening and the protracted Russia–Ukraine war. The lower loan volume projected on the stress path is offset by the relatively faster rise in the interest rate environment, and thus the net interest income in the baseline and the stress scenario is nearly the same in the period under review. By contrast, fee and commission income as well as other income – which comprises the provisioning determined for Russian exposures – are much lower in the stress scenario, and the credit risk model projects significantly higher loan losses. Overall, the distribution of banks' capital adequacy ratios deteriorates particularly in the first year of the stress scenario, but the emerging capital need remains manageable; in aggregate terms, the capital position of the Hungarian banking sector is adequate.

Table 6: Main parameters of the liquidity stress test

Assets			Liabilities		
Item	Degree	Currencies affected	Item	Degree	Currencies affected
Exchange rate shock on derivatives	15 per cent	FX	Withdrawals in household deposits	10 per cent	HUF/FX
Interest rate shock on interest rate sensitive items	300 basis points	HUF	Withdrawals in corporate deposits	15 per cent	HUF/FX
Calls in household lines of credit	20 per cent	HUF/FX	Withdrawals in debt from owners	30 per cent	HUF/FX
Calls in corporate lines of credit	30 per cent	HUF/FX			

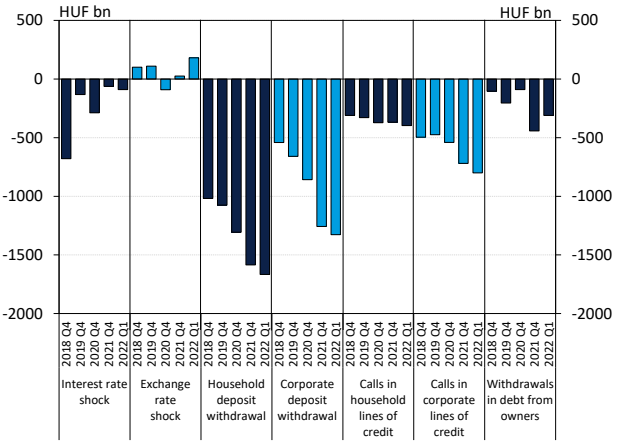
Source: MNB

8.1. Strong liquidity position in spite of the decline in LCR

The liquidity stress test assumes the simultaneous occurrence of major bank liquidity risks and interbank contagion. The liquidity stress test examines the impact on the LCR of the hypothetical, low-probability, simultaneous occurrence of financial market turmoil, an exchange rate shock, deposit withdrawals, credit line drawdowns and withdrawals of owners' funds. In addition, in determining the outcome of the stress test, banks' short-term adjustment opportunities and the contagion effects of defaults on the interbank market are also taken into account[40] (Table Table 6). In light of the recent war, in addition to 2021 H2, results for 2022 Q1 are also quantified on the basis of

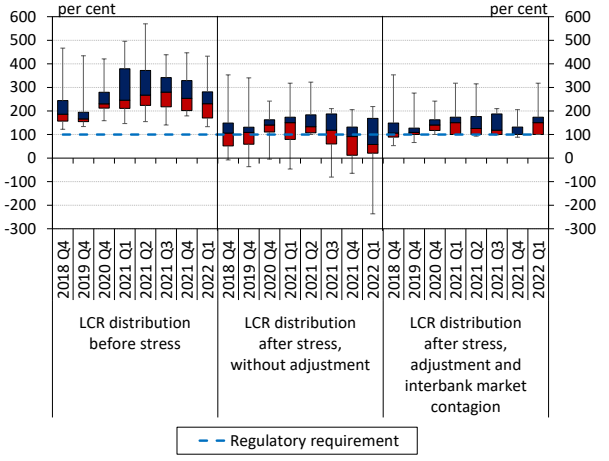
[40] For a detailed description of the methodology, see Box 9 of the May 2016 MNB Financial Stability Report. In terms of objective, logic and applied assumptions, our stress test is fundamentally different from the liquidity stress test used in the supervisory review of the Internal Liquidity Adequacy Assessment Process (ILAAP). Therefore, our findings cannot be directly compared to that.

Chart 78: Aggregate impact of stress components at system level



Note: The columns show the HUF billion change in the LCR's liquid assets at banking sector level as a result of a given shock, adjusted for the change in net outflows. To calculate the impact of each shock we assumed 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

Chart 79: Distribution of LCR before and after stress



Note: The edges of the boxes mean the lower and upper quartiles of the distribution; the border of the colours signifies its median. The lower whisker of the plot shows the 10th percentile, while the upper one shows the 90th percentile. Based on partial data and central bank estimates for 2022 Q1. Source: MNB

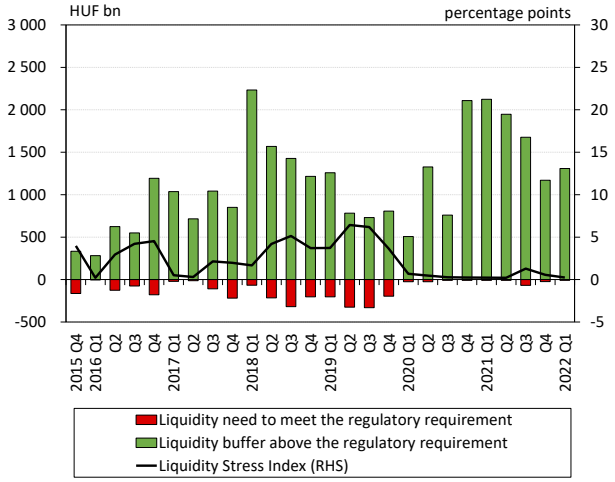
partial data and central bank estimates.[41]

Banks' LCR indicators are most sensitive to shocks in deposit withdrawals. During the past three quarters, the degree of deposit withdrawal shocks increased to a greater extent than the growth in the stocks. Aside from deposit shocks, from all the stress components a shock caused by corporate credit line drawdowns would also trigger a major effect (Chart 78). The interest rate shock, the household credit line drawdown shock and the shock caused by the withdrawal of owners' funds would have a relatively moderate negative effect compared to the rest of the items. From these, the potential impact of a withdrawal of owners' funds rose in September 2021, but in the past two quarters it has gradually approached its level estimated in June last year. Due to the excess of positions against the forint, on the whole the exchange rate depreciation affecting the derivatives portfolio of the banking sector would improve the liquidity position of banks in 2021 and 2022.

The role of bank adjustment channels increases significantly in the stress scenario. Banks' pre-stress median LCR declined in the past three quarters, falling from 270 per cent in June last year to 230 per cent in March 2022. While this is still high at sector level, behind this development a decline was noted at the upper end of the distribution of institutions as well (Chart 79). The effect of the shocks increased significantly during the past three quarters, and thus, by our estimates, the median stressed LCR of banks – ignoring banks' adjustment opportunities after a stress event – amounted to 58 per cent in March 2022, compared to 133 per cent in June 2021. The number of banks with extremely poor results would increase substantially, the lower quarter of the distribution would shift left to a significant degree, while the liquidity adequacy of the lower decile would deteriorate to a particularly large degree. Also taking account of the adjustment opportunities and the liquidity increasing effect of the monetary policy framework revised in spring 2020, the dispersion of the LCR within the sector narrows considerably, average adequacy improves, and all institutions, with the exception of one, would meet the regulatory minimum even under serious liquidity stress.

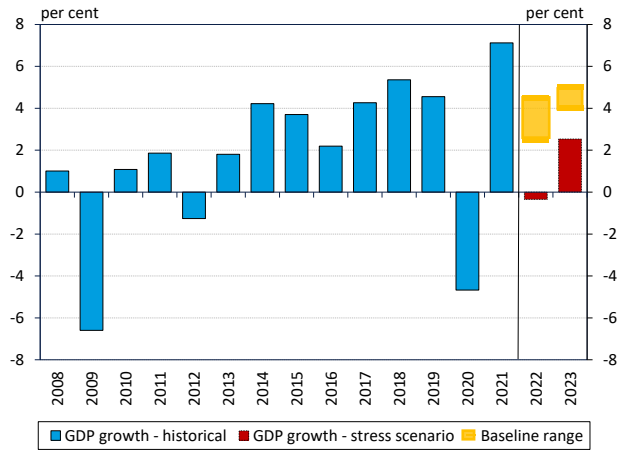
[41] From the spring 2020 changes in the monetary policy toolkit, in our calculations we still take into account the measures that remain effective and relevant during our liquidity stress test, thus including the eligibility as a liquid asset of the free stock of large corporation loans and bonds after reduction with an adequate haircut.

Chart 80: The Liquidity Stress Index



Note: The indicator is the sum of the liquidity shortfalls in percentage points (no more than 100 percentage points) compared to the 100-percent 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 sector thereafter. Based on partial data and central bank estimates for 2022 Q1. Source: MNB

Chart 81: Annual GDP growth rate in the scenarios



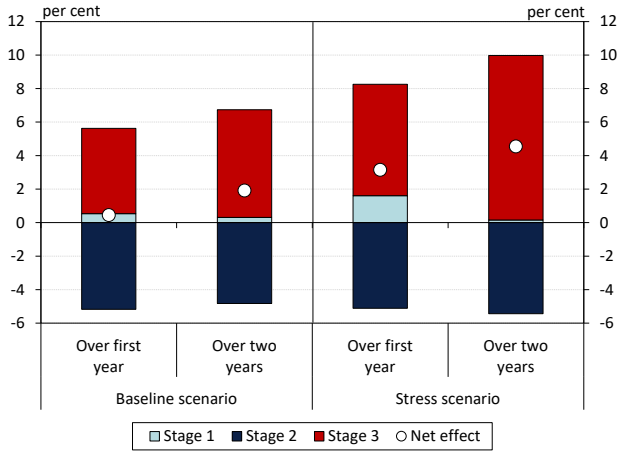
Source: MNB

Considering the risk management measures, the Liquidity Stress Index still implies a low level of risk. The Liquidity Stress Index, which was prepared to capture the heterogeneity across institutions, aggregates – weighting by size of bank – the post-stress percentage point liquidity shortfalls compared to the regulatory limit calculated at the level of the individual banks. This allows us to draw conclusions with regard to the extent of a potential stress situation within the banking sector. Banks' liquidity surplus was down from HUF 1950 billion in mid-2021 to HUF 1170 billion by the end of the year, but it rose to HUF 1300 billion in 2022 Q1. Similarly to December 2021 stress test, the liquidity need of the banking sector remained below HUF 10 billion (Chart 80). Looking ahead, a relative decline in the liquidity surplus is expected in accordance with the current monetary tightening.

8.2. Majority of sector would have an adequate capital position even in a stress event

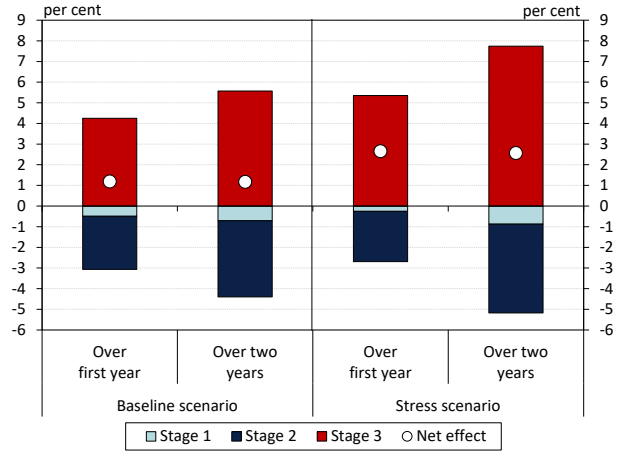
In the stress scenario, we examine the impact on capital adequacy of an economic slowdown, rising interest rates and a weakening exchange rate evolving as a joint result of unfavourable shocks. We used the forecast of the March 2022 Inflation Report in the stress test baseline scenario. The results of our calculations reflect the development of the midpoint of the forecast range. The impact of a simultaneous occurrence of various external and internal risks is depicted in the stress scenario, the most prominent of them is the downturn in the real economy caused by the protracted Russia–Ukraine war, high inflation and the changed monetary environment. Global supply problems and geopolitical tensions are resulting in major disorders in supply chains, leading to a decline in external demand, and parallel to that in domestic export dynamics. Amidst uncertainty the private sector's risk aversion increases, investor sentiment deteriorates, and consumption also declines due to a decrease in disposable incomes. Due to strengthening risk aversion, capital outflows from emerging economies may increase, leading to higher volatility in the money and capital markets. Overall, in the stress scenario Hungarian GDP growth falls 5–6 per cent short in cumulative terms of the rate assumed in the baseline scenario, accompanied by a weakening exchange rate and a rise in the interest rate level (Chart 81).

Chart 82: Cumulative loan loss provision rate for the corporate portfolio



Note: Net generated loan loss provisions from the start of the stress test, grouped by end-of-period stages, in proportion to the gross book value of the corporate portfolio. Source: MNB

Chart 83: Cumulative loan loss provision rate for the household portfolio



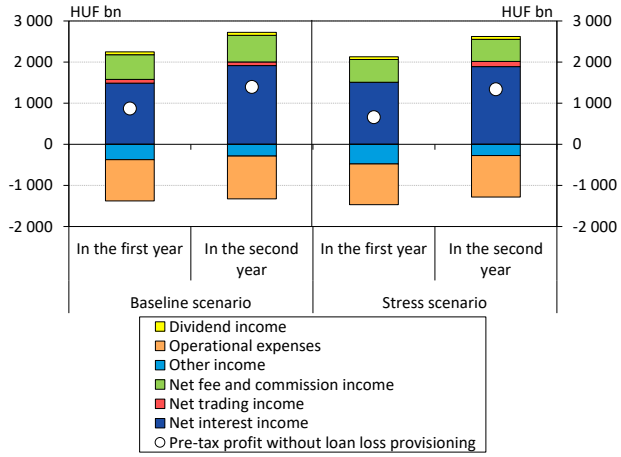
Note: Net generated loan loss provisions from the start of the stress test, grouped by end-of-period stages, in proportion to the gross book value of the household portfolio. Source: MNB

The risks pertaining to the stress scenario entail high loan loss provisioning, especially in the corporate segment. The high number of loans that recently left the general moratorium may become non-performing again from 2022 Q1, which is reflected in the rise in the probability of default. In addition, according to the model, only a small share of riskier loans participating in the third phase of the moratorium will recover to Stage 1 following June 2022.[42] As a result of the macroeconomic shock, in line with the rules of IFRS 9, a significant portion of the loan loss provisioning to be recognised in the stress scenario over two years already appears at the beginning of the scenario. Accordingly, in 2022 Q1 and Q2, a high number of loans moved into the delinquent categories as a result of the factors manifesting at various times. Since loans that become non-performing cannot recover into performing risk categories, according to the model's assumptions, the migration into Stage 3 means the aggregate volume of Stage 2 impairments (new impairment, balance of inflows and outflows) declines by the end of the first and second years. On the whole, total additional loan loss provisioning would reach 4.5 per cent of the aggregate gross book value in the case of the corporate portfolio (Chart 82) and 2.6 per cent in the case of the household portfolio in the course of the stress scenario (Chart 83).[43]

[42] As opposed to the general methodology of the model, we allow clients who leave the moratorium to recover, while loans that participate in the third phase of the moratorium may become performing again after three years. Together with this, the credit risk model handles the portfolios participating in the moratorium according to the methodology described in the December 2021 Financial Stability Report.

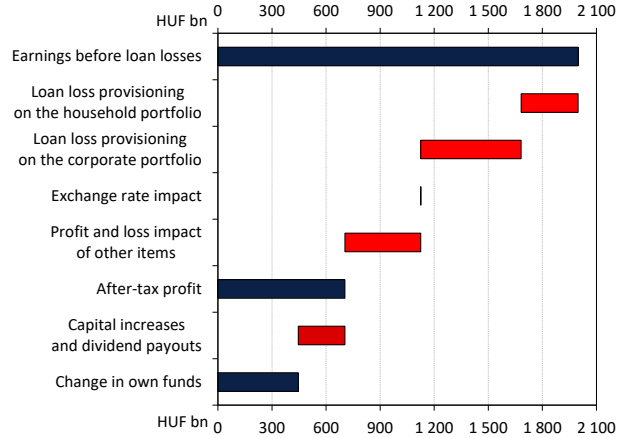
[43] This means a decline compared to the results published in the December 2021 Financial Stability Report, and the reason is primarily methodological. Previously, the classification of Stage 1 loans falling under the scope of the general moratorium was estimated based on underlying economic developments. However, a major portion of these loans no longer participate in the third phase of the moratorium, and consequently we based their classification upon actual bank data. For the majority the initial classification is more favourable than the one estimated in December 2021, inducing a lower need for loan loss provisioning in their case.

Chart 84: Developments in earnings items before loan losses



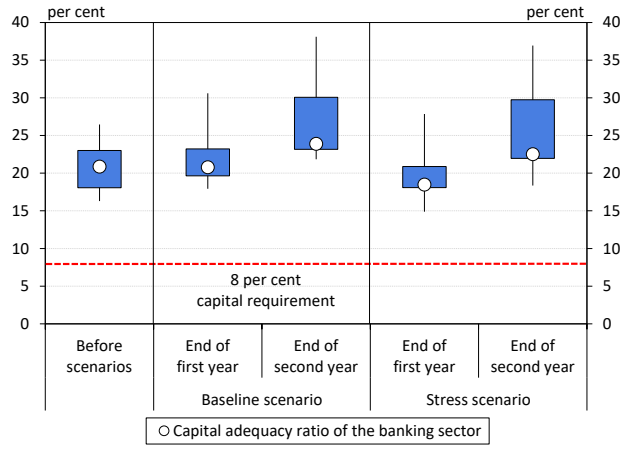
Source: MNB

Chart 85: Changes in certain profit and loss items of the banking sector in the stress scenario



Note: Cumulative values over the two-year scenario. The profit and loss impact of other items consists of the following: NDIF, IPF and Resolution Fund fee, bank levy, capital needs of foreign subsidiaries and bank groups' tax expense. Source: MNB

Chart 86: Distribution of capital adequacy ratio based on number of banks



Note: Vertical line: 10-90 per cent range, rectangle: 25-75 per cent range. Source: MNB

The income before loan losses achieved in the stress scenario is close to, but slightly below that of, the baseline scenario. Although the relatively higher interest rate path of the stress scenario has a positive impact on the interest incomes of the repricing assets, due to the different, much lower loan disbursement[44] the two-year net interest income falls slightly short of that in the baseline scenario. The difference between the results of the two scenarios is reduced by the decline in the repricing effect appearing in the second quarter of the stress scenario as a result of banks' balance sheet adjustments observed in the past half year. Since we focus on banks' domestic subconsolidated activity in the stress test, in addition to the effects captured in the macroeconomic scenarios in relation to the Russia–Ukraine war we also took into account the possible risks inherent in the Russian and Ukrainian exposures in the balance sheets. In the spirit of a conservative approach, for the significant exposures – observable at a few Hungarian banks – we projected 50 and 100 per cent provisions for each institution in the baseline and stress scenarios, respectively, included in other income. In addition, as a result of the more subdued economic activity, net commission and fee income causes the greatest negative difference in the stress scenario. As a result of all these, income before loan losses achieved in the stress scenario is some HUF 269 billion lower than that estimated over the two-year horizon of the baseline scenario (Chart 84).

Although the own funds of the sector increase even in the stress scenario, its level is substantially lower than in the baseline scenario. The banking sector's profit of HUF 1999 billion before loan losses and taxes achieved in the two-year stress scenario is reduced by a total of HUF 1294 billion because of household and corporate portfolios' loan loss provisioning, the moderate exchange rate effect, and other items including corporate income tax, resulting in a difference of HUF 748 billion between the after-tax profits of the two scenarios (Chart 85). Banks' fee obligations (related to deposit insurance and resolution funds[45]), the bank levy and other tax expenses alone have a negative effect of a further HUF 421 billion. Significant heterogeneity can be identified among institutions. In the period under review, expressed in terms of total assets, 3.3 per cent of the sector suffer losses in the stress scenario; while this ratio reaches 88.7 per cent in the first year. Nevertheless, the sector's own funds grow by HUF 446 billion in the two-year stress scenario.

Table 7: Stress test results at various capital requirements

	8-per cent capital requirement				Overall capital requirement*			
	Baseline scenario 2022 Q4	Baseline scenario 2023 Q4	Stress scenario 2022 Q4	Stress scenario 2023 Q4	Baseline scenario 2022 Q4	Baseline scenario 2023 Q4	Stress scenario 2022 Q4	Stress scenario 2023 Q4
Capital need of banks (HUF bn)	0.0	0.5	0.0	2.7	4.5	9.6	6.8	11.0
Average capital need of banks** (percentage points)	0.0	0.5	0.0	2.7	5.1	8.7	8.2	11.0
Capital buffer of banks above requirement (HUF bn)	2 643	3 501	2 021	2 912	1 293	2 049	751	1 583
Average capital buffer of banks** (percentage points)	12.5	15.7	10.1	14.3	6.1	9.2	3.8	7.7

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

Despite the high estimated volume of loan loss provisioning, only a moderate capital shortage materialises in the stress scenario. As a result of the shocks assumed in the scenario, the end-2021 capital adequacy ratio (CAR) of 20.9 per cent, which contains the total interim profit as well, falls to 18.5 per cent in the first year of the stress path. In accordance with this, the distribution of banks also shows a negative shift and is substantially below that estimated for the baseline scenario. At the end of the period under review, however, the sector-level CAR in both scenarios rises above the last actual data, reaching 22.5 per cent in the stress scenario (Chart 86). The 2022 dividend payout plans do not jeopardise the capital adequacy of any bank. Expressed in terms of the total risk exposure amount, capital need arises only for 0.5 per cent of the sector at the end of the stress scenario, which is manageable at sector level (Table Table 7). The temporary deficits occurring at other institutions turn into surpluses in each case by the end of the scenario. Thus, the majority of the sector has an adequate capital position even in an unfavourable economic environment and taking the reintroduction of capital requirements into account.

[44] In comparison with previous exercises, the methodology of the current solvency stress test differs by having two separate projections for lending dynamics based on the given macroeconomic scenario of the two paths.

[45] The fee obligations include the extraordinary payments in 2022 related to the Hungarian National Deposit Insurance Fund. In the baseline scenario, the profit and loss impact of the latter item is deemed neutral given the NDIF repayment obligation.

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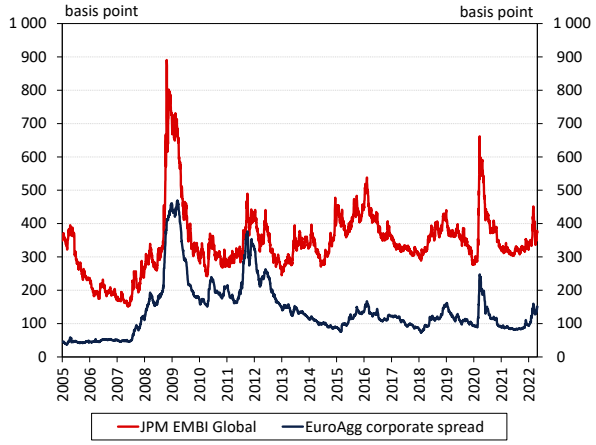
APPENDIX: MACROPRUDENTIAL INDICATORS

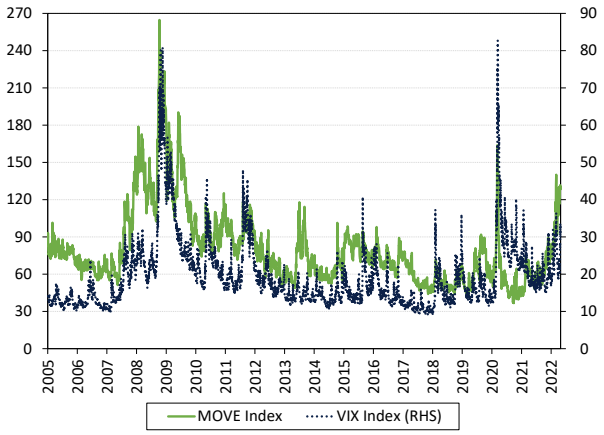
1. Risk appetite

Chart 1: Primary risk indicators



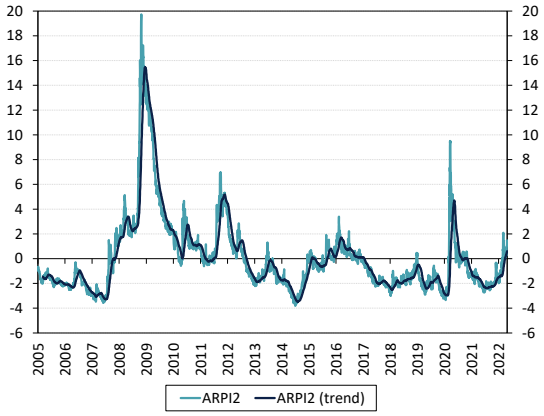
Source: Bloomberg

Chart 2: Implied volatility of the primary markets



Source: Bloomberg

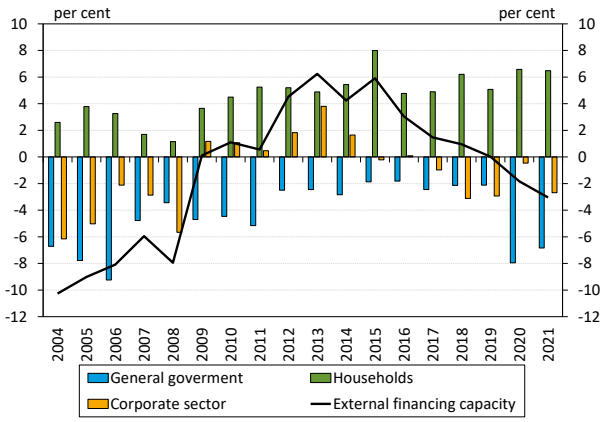
Chart 3: Dresdner Kleinwort indicator



Source: DrKW

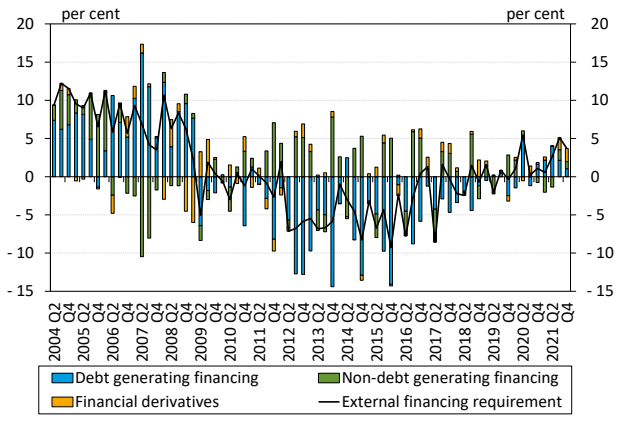
2. External balance and vulnerability

Chart 4: Net financing capacity of the main sectors and external balance as percentage of GDP



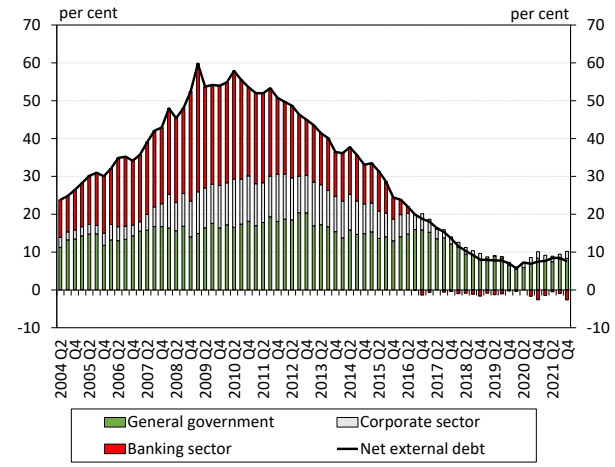
Source: MNB

Chart 5: External financing requirement and its financing as a percentage of GDP



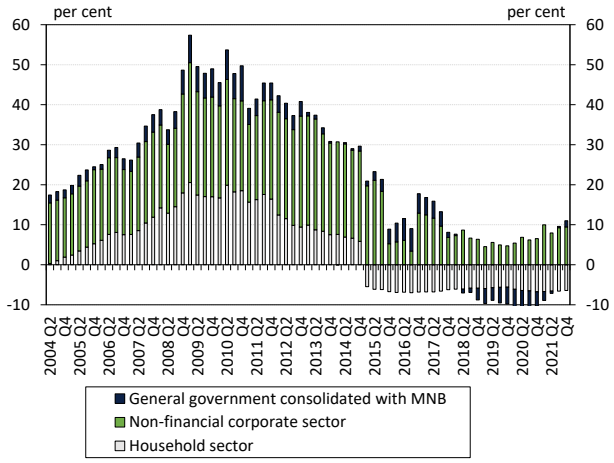
Source: MNB

Chart 6: Net external debt as a percentage of GDP



Source: MNB

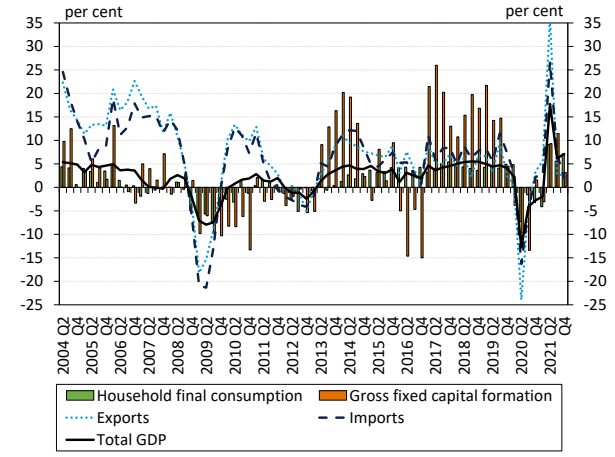
Chart 7: Open FX position of the main sectors in the balance sheet as percentage of GDP



Source: MNB

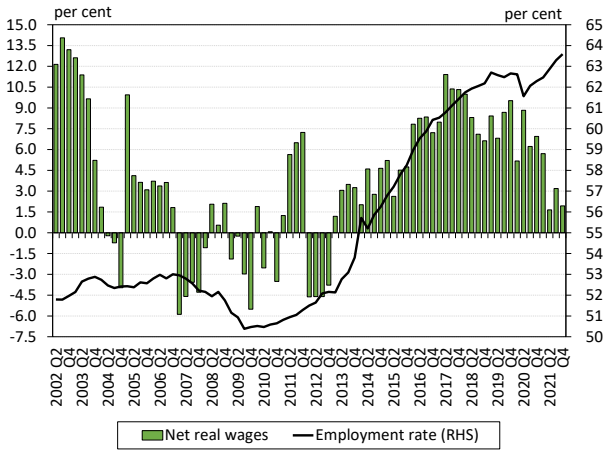
3. Macroeconomic performance

Chart 8: GDP growth and its main components (annual growth rate)



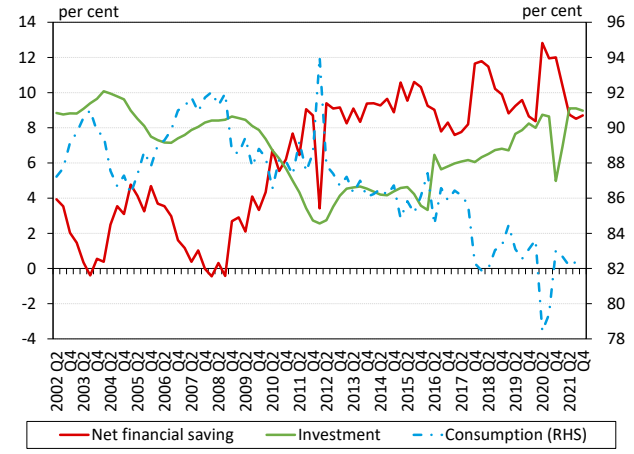
Source: HCSO

Chart 9: Employment rate and net real wage developments (annual growth rate)



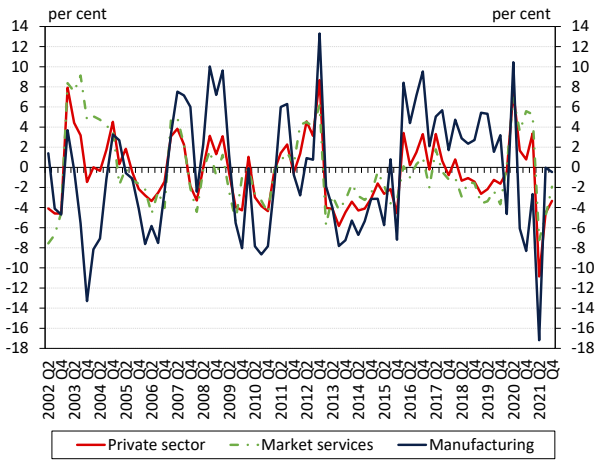
Source: HCSO

Chart 10: Use of household income as a ratio of disposable income



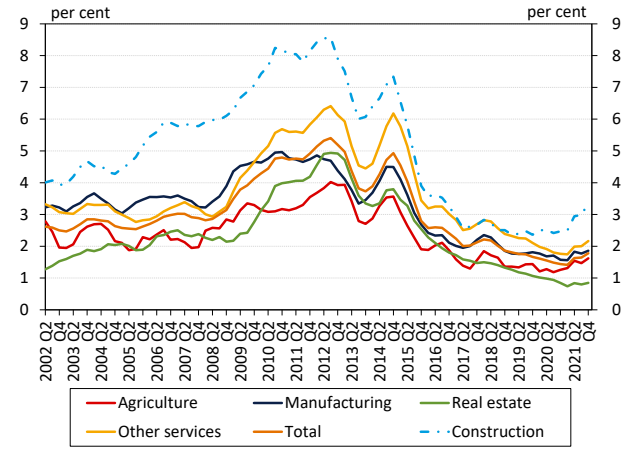
Source: HCSO, MNB

Chart 11: Corporate real unit labour cost in the private sector (annual growth rate)



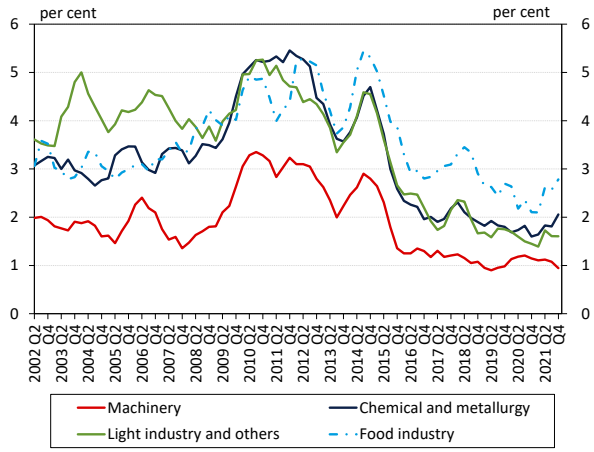
Source: HCSO, MNB

Chart 12: Sectoral bankruptcy rates



Source: Opten, MNB, HCSO

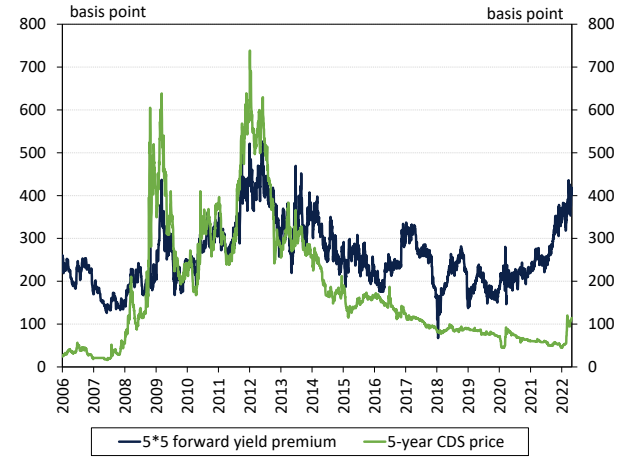
Chart 13: Bankruptcy rates for the subsets of manufacturing industry



Source: Opten, MNB, HCSO

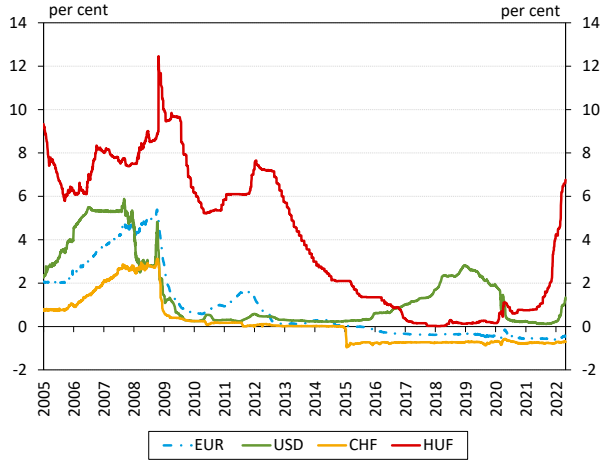
4. Monetary and financial conditions

Chart 14: Long-term sovereign default risk and forward premium of Hungary



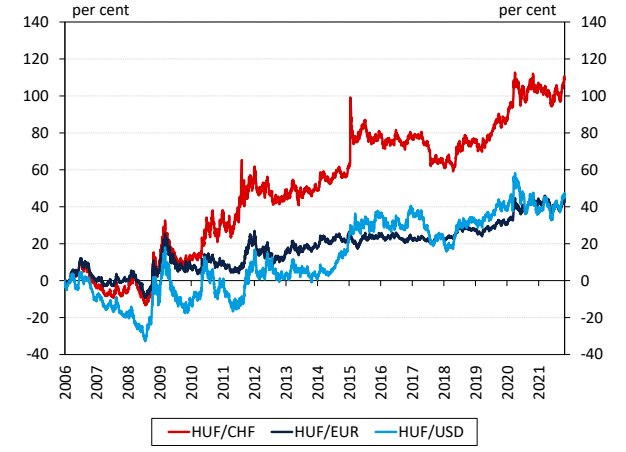
Source: Reuters, Bloomberg

Chart 15: Three-month EUR, USD, CHF and HUF money market interest rates (LIBOR and BUBOR fixing)



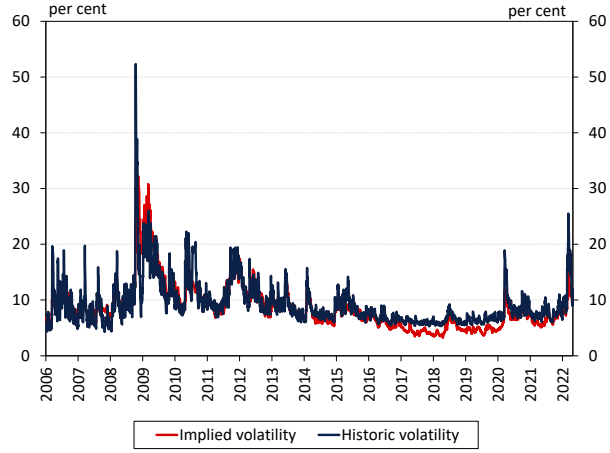
Source: Bloomberg

Chart 16: HUF/EUR, HUF/USD and HUF/CHF exchange rates changes compared to 2 January 2006



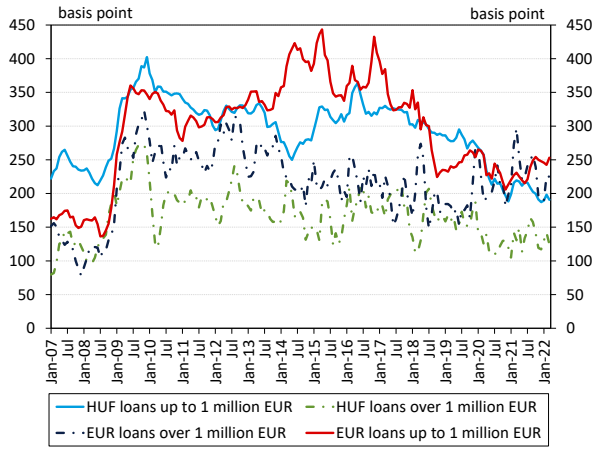
Source: Reuters

Chart 17: Volatility of the HUF/EUR exchange rate



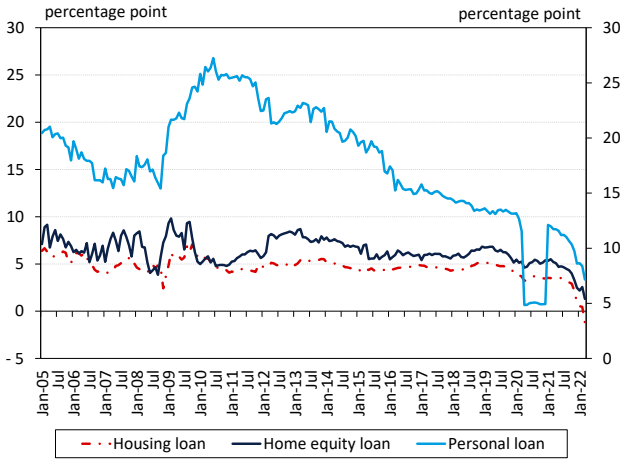
Source: Bloomberg, MNB

Chart 18: Interest rate premium of new loans to non-financial enterprises (over 3-month BUBOR and EURIBOR, respectively, 3-month moving average)



Source: MNB

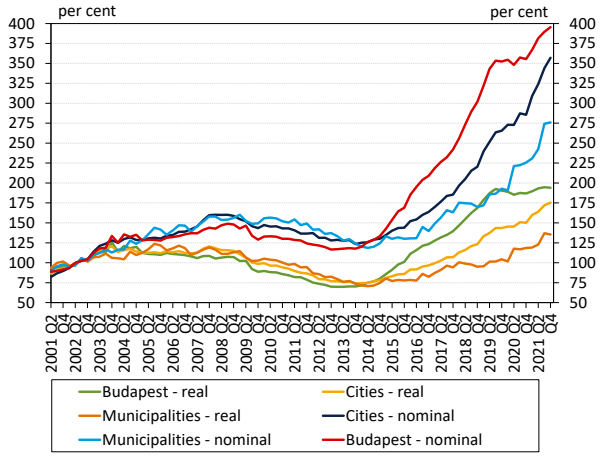
Chart 19: Interest rate premium of new HUF loans to households (over 3-month BUBOR)



Source: MNB

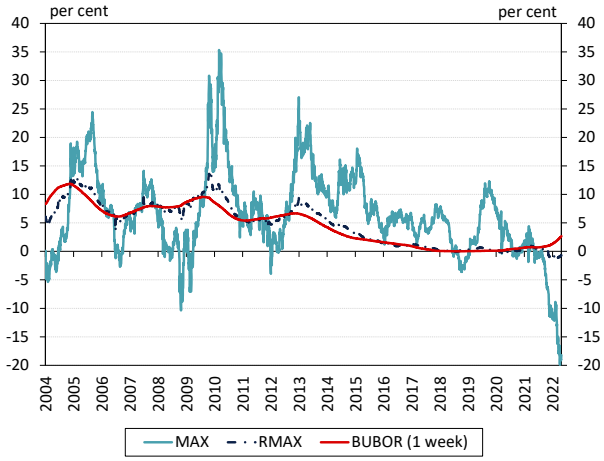
5. Asset prices

Chart 20: MNB house price index breakdown by settlement type



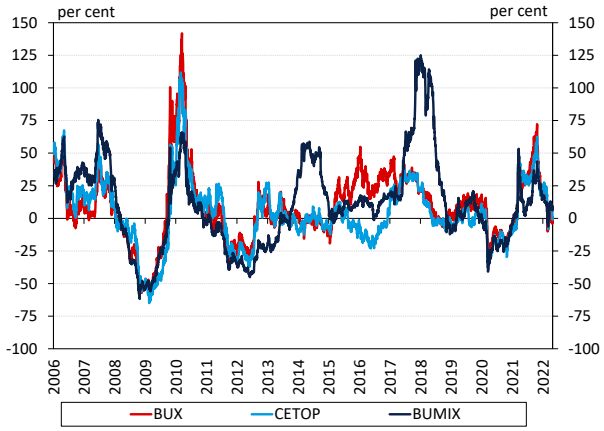
Source: MNB

Chart 21: Annualised yields on government security indices and money markets



Source: Government Debt Management Agency, MNB, portfolio.hu

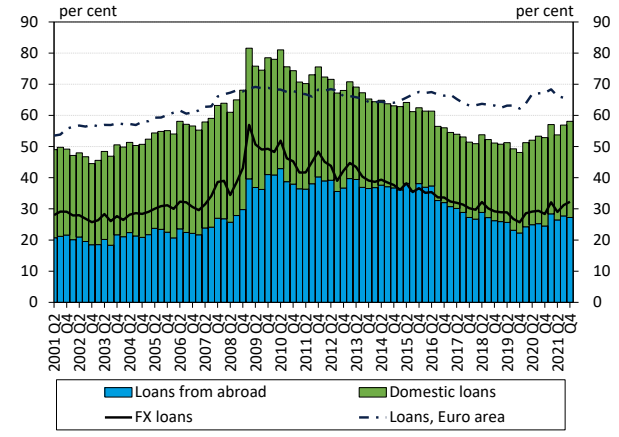
Chart 22: Annual yield of key Hungarian and Central and Eastern European stock market indices



Source: BSE, portfolio.hu

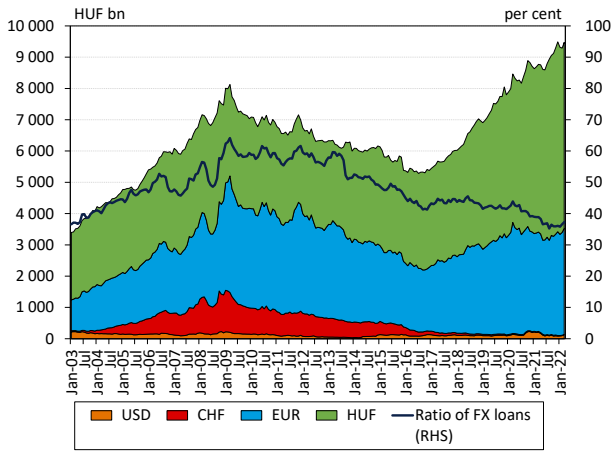
6. Risks of the financial intermediary system

Chart 23: Indebtedness of non-financial corporations as percentage of GDP



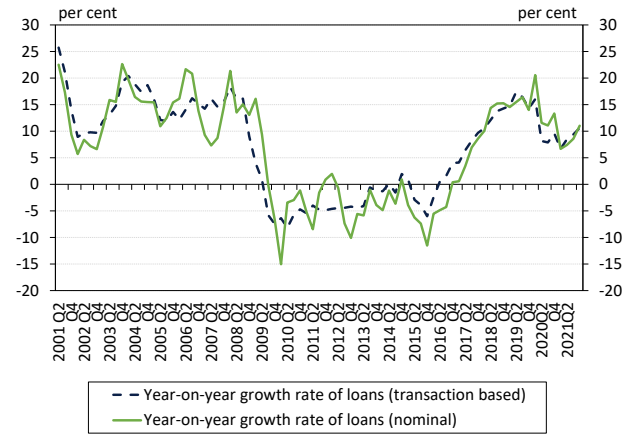
Source: MNB, ECB, Eurostat

Chart 24: Denomination structure of domestic bank loans of non-financial corporations



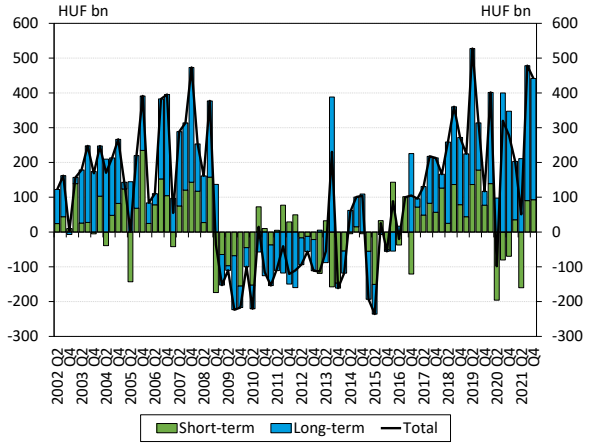
Source: MNB

Chart 25: Annual growth rate of loans provided to non-financial corporations by the financial intermediation system



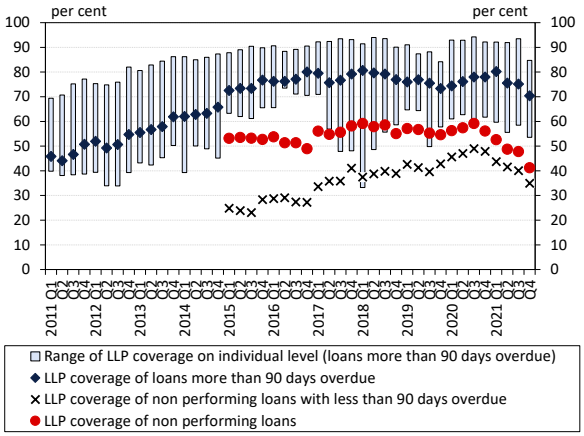
Source: MNB

Chart 26: Lending transactions to the non-financial corporate sector broken down by maturity



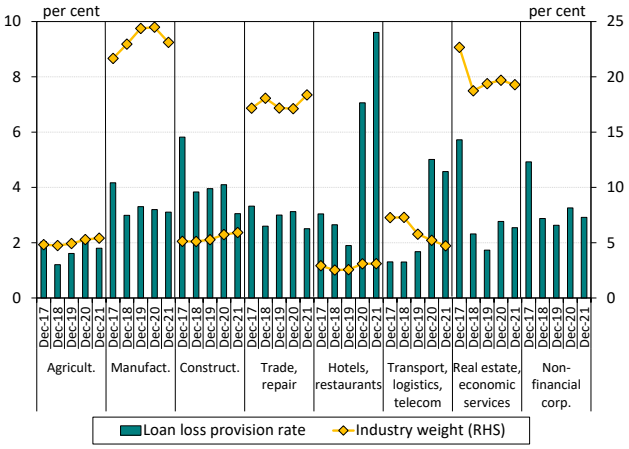
Source: MNB

Chart 27: Loan loss coverage ratio for non-performing corporate loans in the credit institutions sector



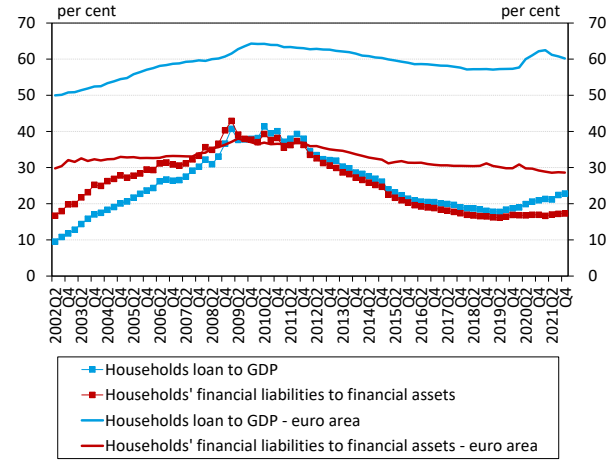
Source: MNB

Chart 28: Provisioning on loans of non-financial corporations by industry



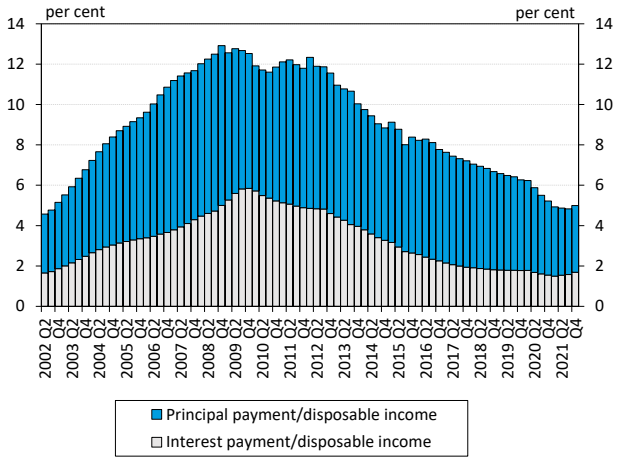
Source: MNB

Chart 29: Indebtedness of households in international comparison



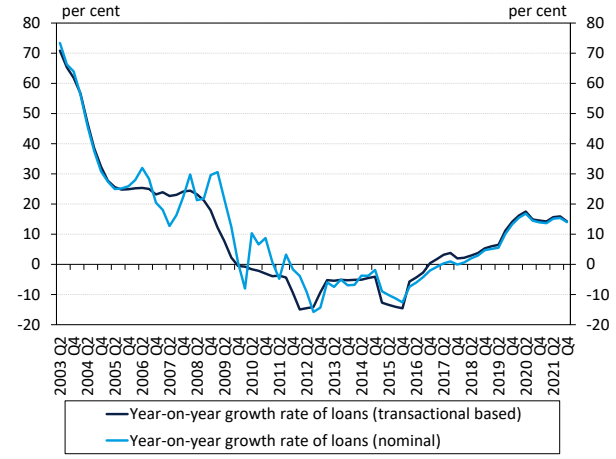
Source: MNB, ECB

Chart 30: Debt service burden of the household sector



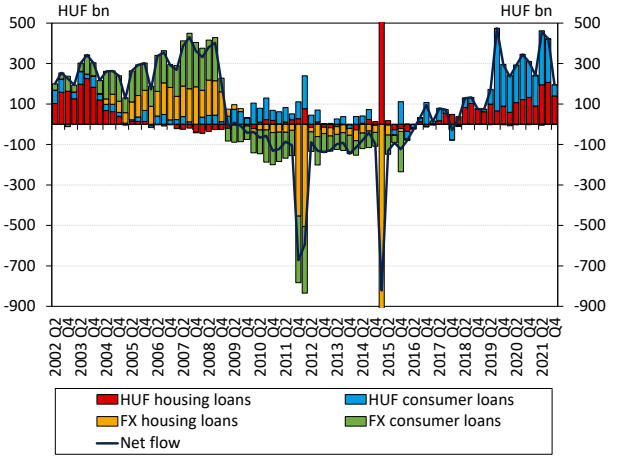
Source: MNB

Chart 31: Annual growth rate of total domestic household loans



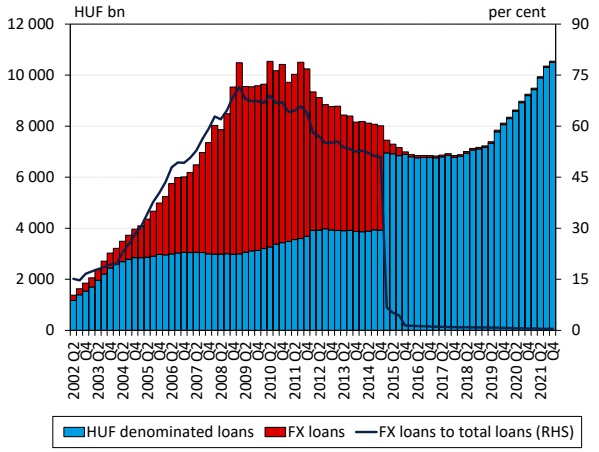
Source: MNB

Chart 32: Transactions of household loans broken down by credit purpose and denomination



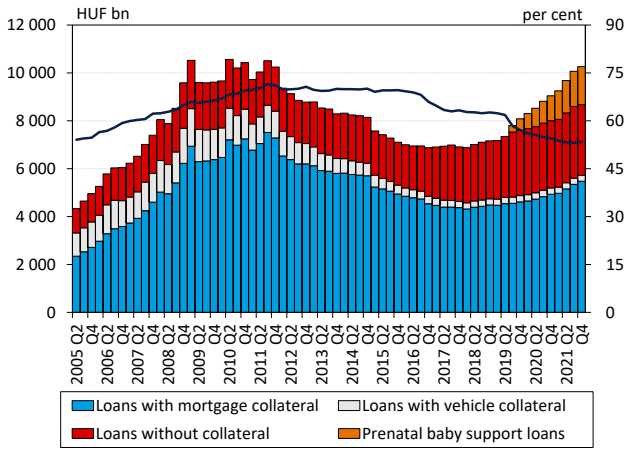
Source: MNB

Chart 33: The denomination structure of household loans



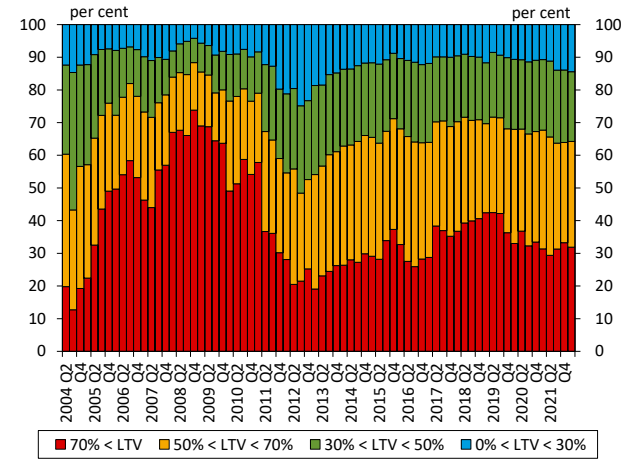
Source: MNB

Chart 34: Household loans distribution by collateralisation



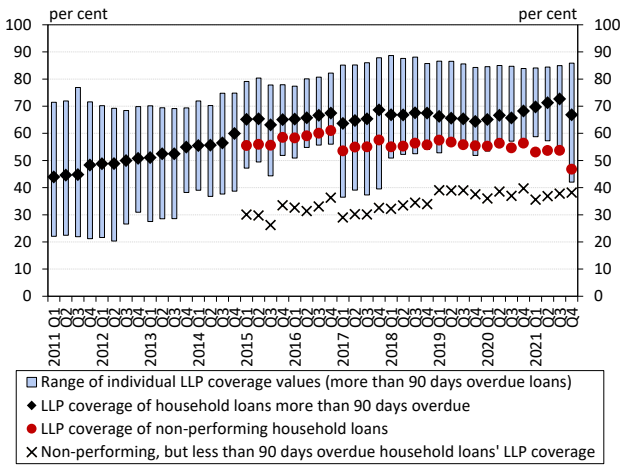
Source: MNB

Chart 35: Distribution of new housing loans by LTV



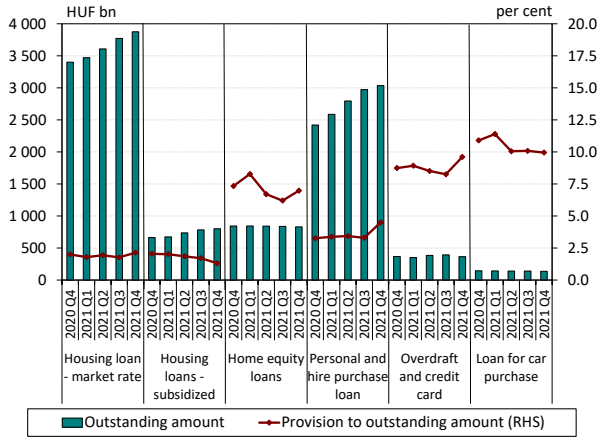
Source: MNB

Chart 36: Loan loss coverage ratio of non-performing household loans



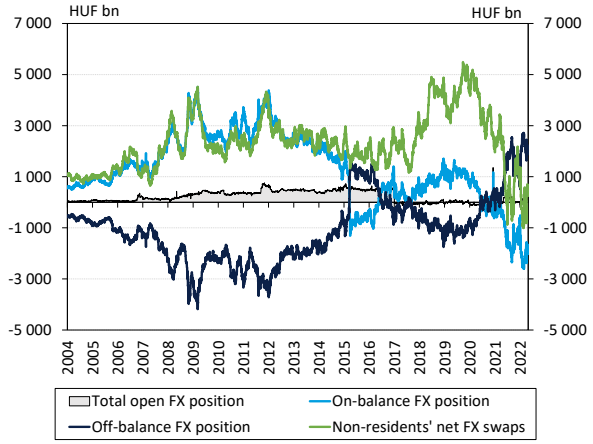
Source: MNB

Chart 37: Provisioning on household loans of financial institutions



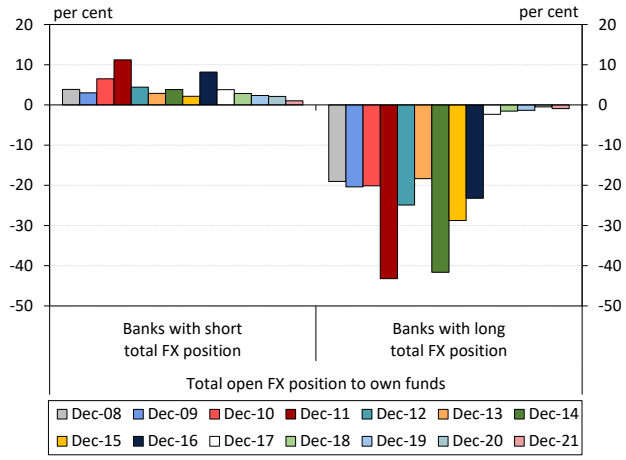
Source: MNB

Chart 38: Open FX position of the domestic banking sector



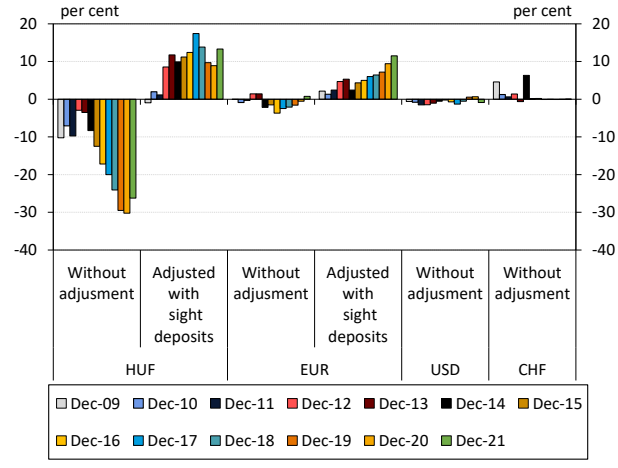
Source: MNB

Chart 39: The exchange rate exposure of the banking sector



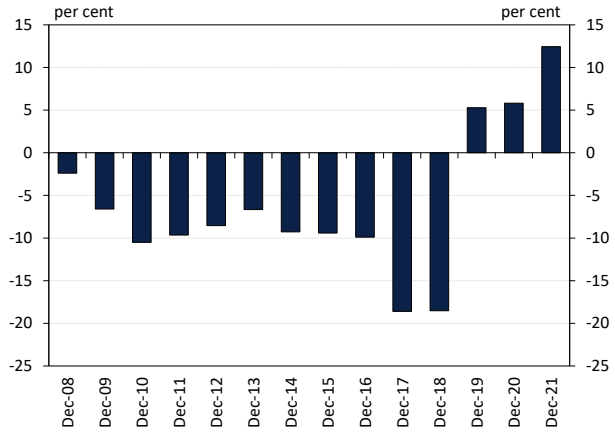
Source: MNB

Chart 40: 90-day re-pricing gap of the banking sector



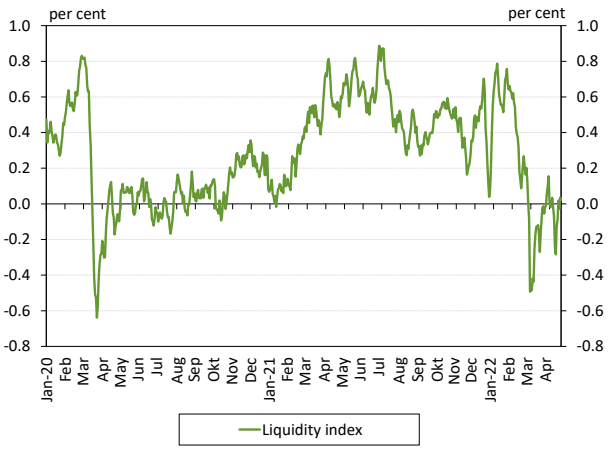
Source: MNB

Chart 41: Estimated maximum loss based on interest rate risk stress tests relative to equity



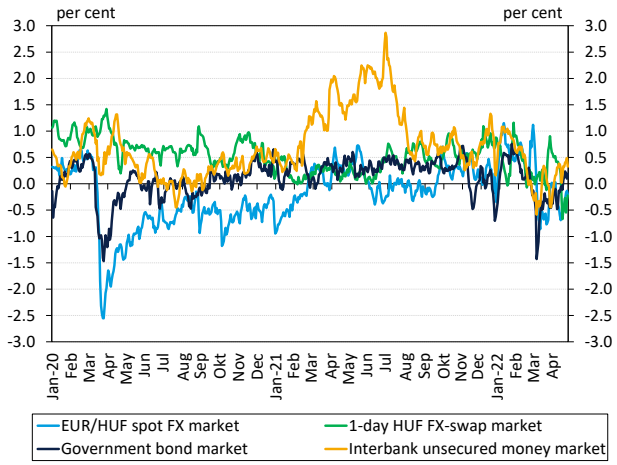
Source: MNB

Chart 42: Liquidity index



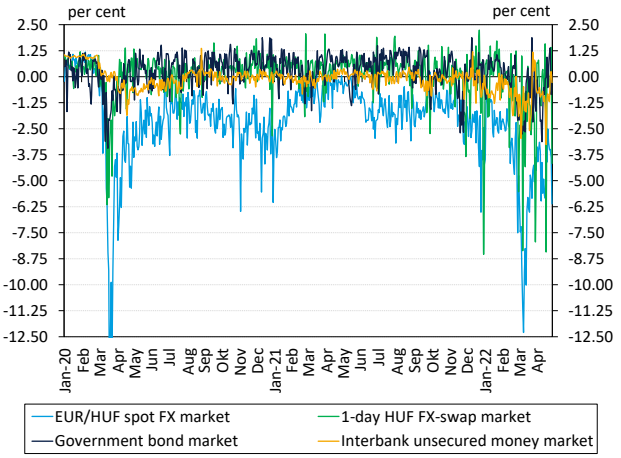
Source: MNB, KELER, Bloomberg

Chart 43: Liquidity indices of sub-markets



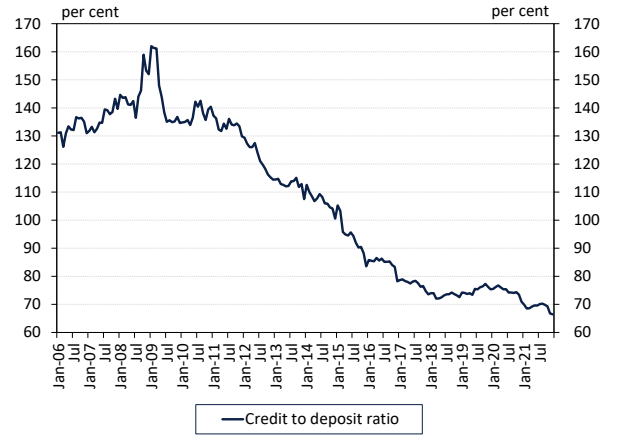
Source: MNB, KELER, Bloomberg

Chart 44: Liquidity sub-indices of bid-ask spreads of the major domestic financial markets)



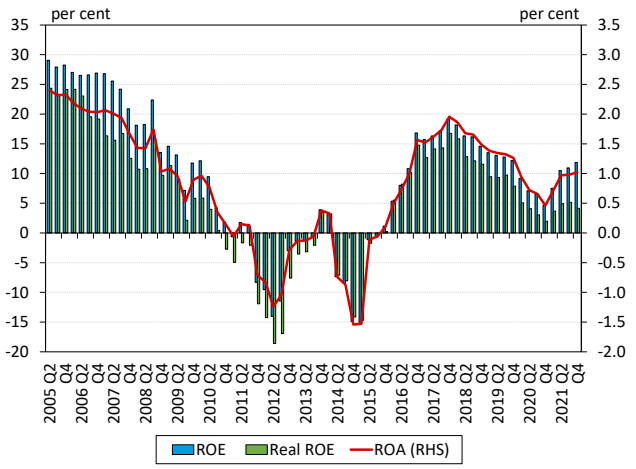
Source: MNB, KELER, Bloomberg

Chart 45: Credit to deposit ratio of the banking sector



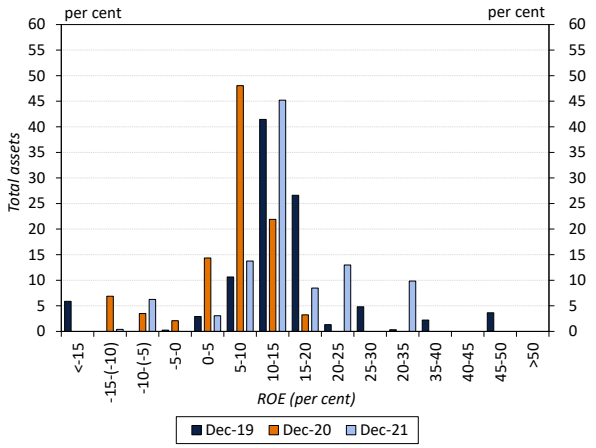
Source: MNB

Chart 46: ROA, ROE and real ROE of the credit institution sector



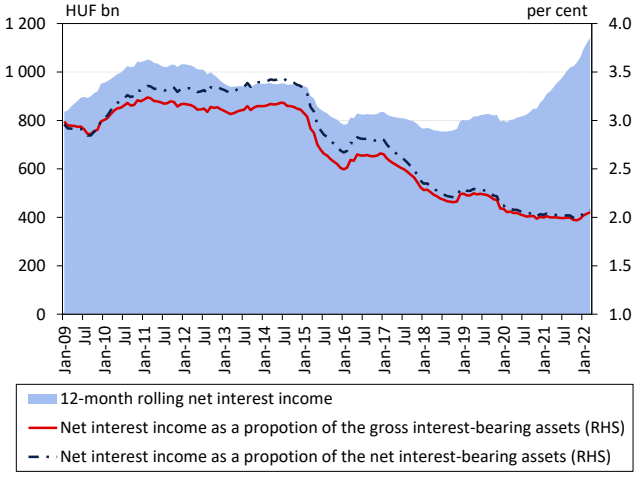
Source: MNB

Chart 47: Dispersion of banks' total assets by ROE



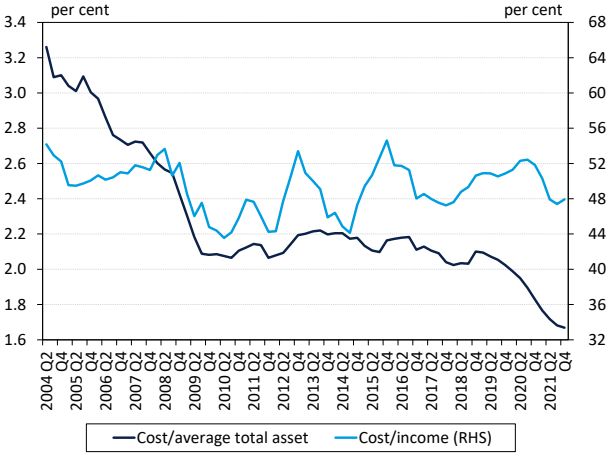
Source: MNB

Chart 48: Net interest income as a proportion of the gross and net interest bearing assets in the credit institution sector



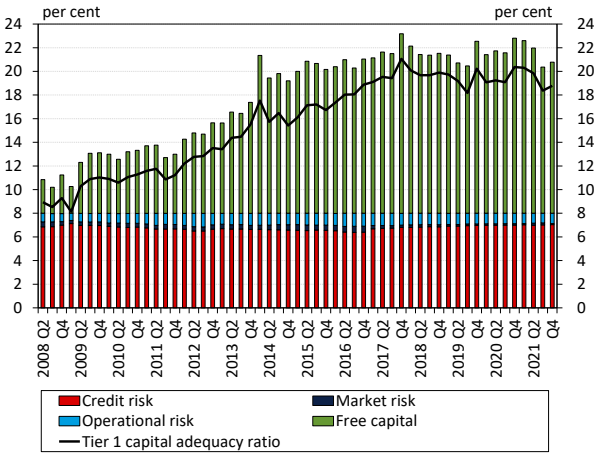
Source: MNB

Chart 49: Operating efficiency indicators of the banking sector



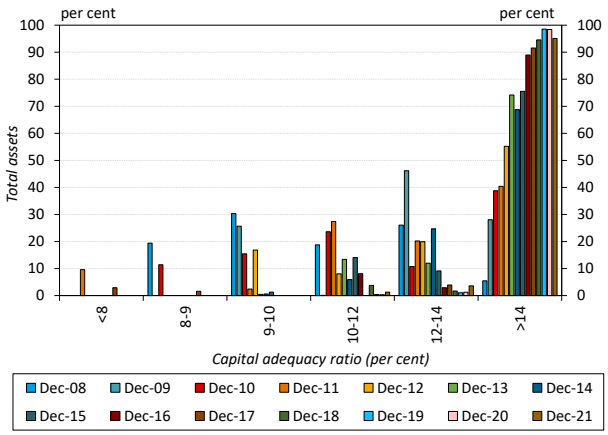
Source: MNB

Chart 50: Banks' capital adequacy ratio (CAR) and Tier 1 capital adequacy ratio



Source: MNB

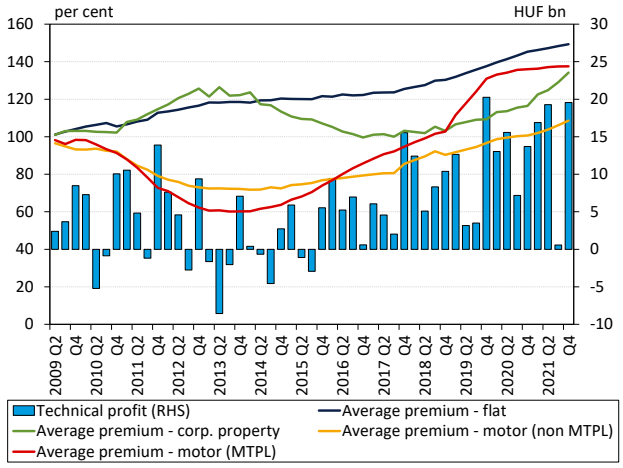
Chart 51: Dispersion of banking sector's total assets by capital adequacy ratio



Source: MNB

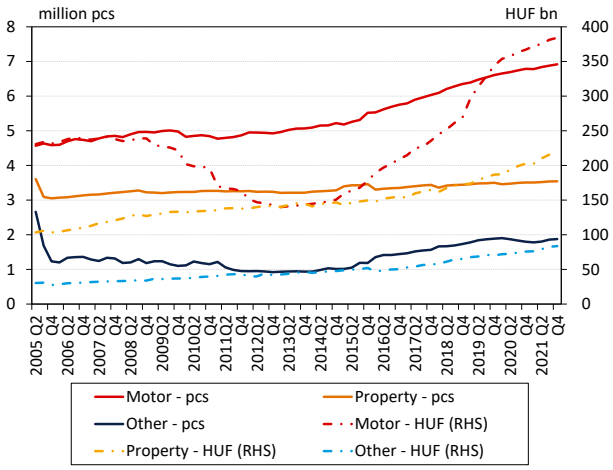
7. Institutional investors

Chart 52: Underline data of insurance tax



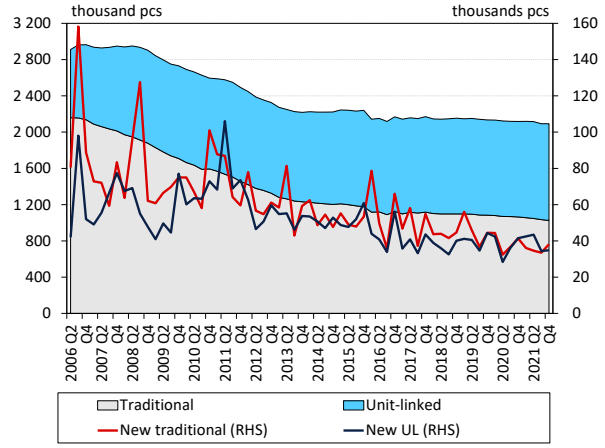
Source: MNB

Chart 53: Development of the outstanding amount of non-life insurance



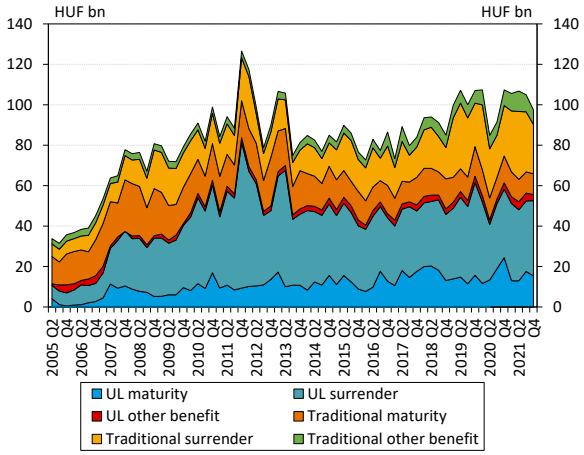
Source: MNB

Chart 54: Development of the outstanding amount of life insurance



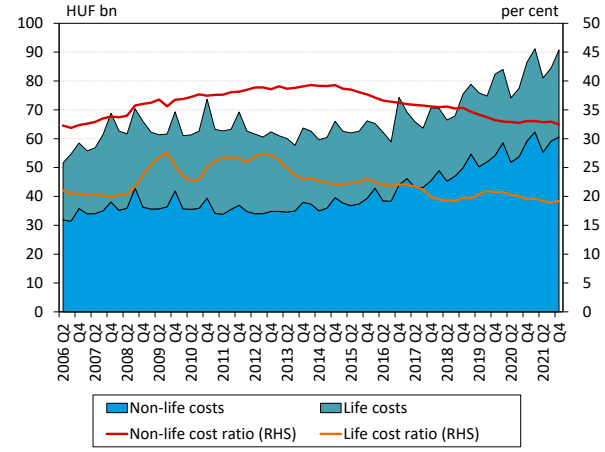
Source: MNB

Chart 55: Development of the outstanding amount of life insurance benefits



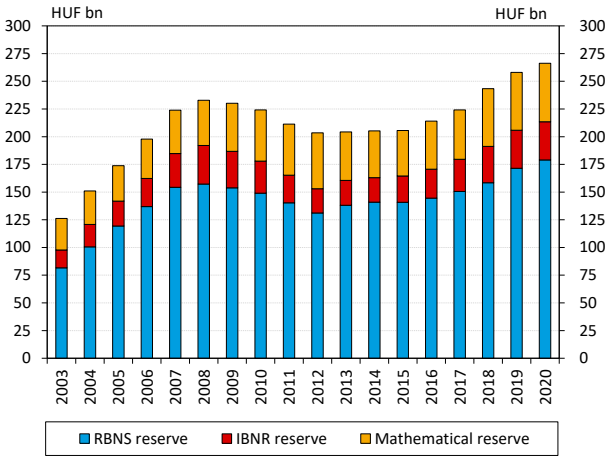
Source: MNB

Chart 56: Costs in the insurance sector



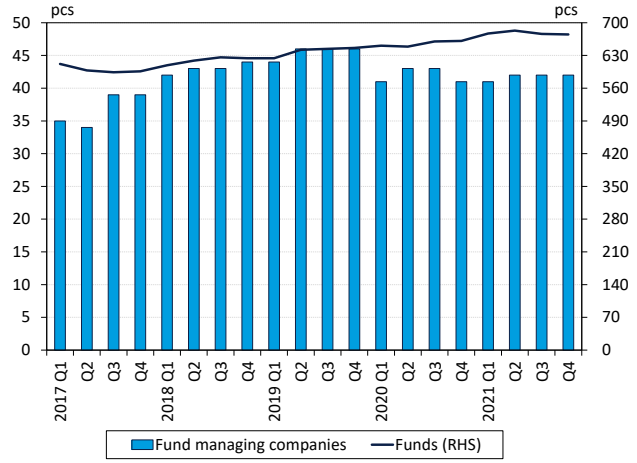
Source: MNB

Chart 57: Development of gross mtpl reserves



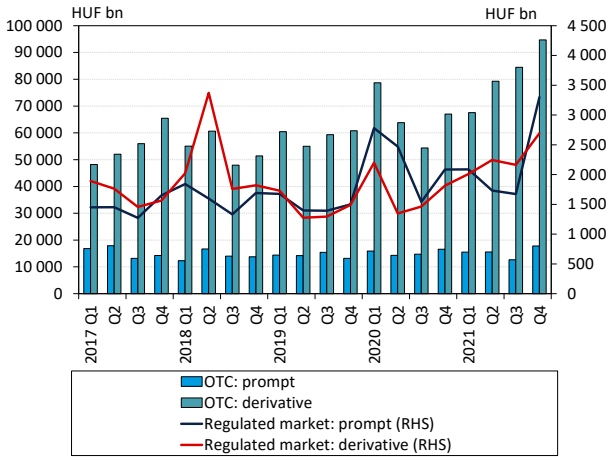
Source: MNB

Chart 58: Number of investment fund managing companies and investment funds



Source: MNB

Chart 59: 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 3:

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

Chart 5:

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

Chart 6:

Excluding intercompany loans.

Chart 7:

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 10:

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

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.

Chart 13:

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.

Chart 14:

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 17:

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

Chart 18:

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 19:

Spreads based on the APR.

Chart 20:

2002 average = 100 per cent.

Chart 23:

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

Chart 26:

Exchange rate adjusted values.

Chart 27:

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

Chart 28:

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

Chart 35:

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

Chart 36:

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

Chart 38:

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 40:

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 41:

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 42:

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 43.

Chart 43:

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 44:

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 45:

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 46:

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 47:

Pre-tax profit.

Chart 48:

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 49:

Cost: previous 12 months.

Income: previous 12 months.

Average total asset: mean of previous 12 months.

Chart 50:

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 53:

Motor insurance premiums contains insurance tax from 2019.

Chart 59:

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.

FINANCIAL STABILITY REPORT

May 2022

Print: Prospektus Kft.

H-8200 Veszprém, Tartu u. 6.

mnb.hu

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