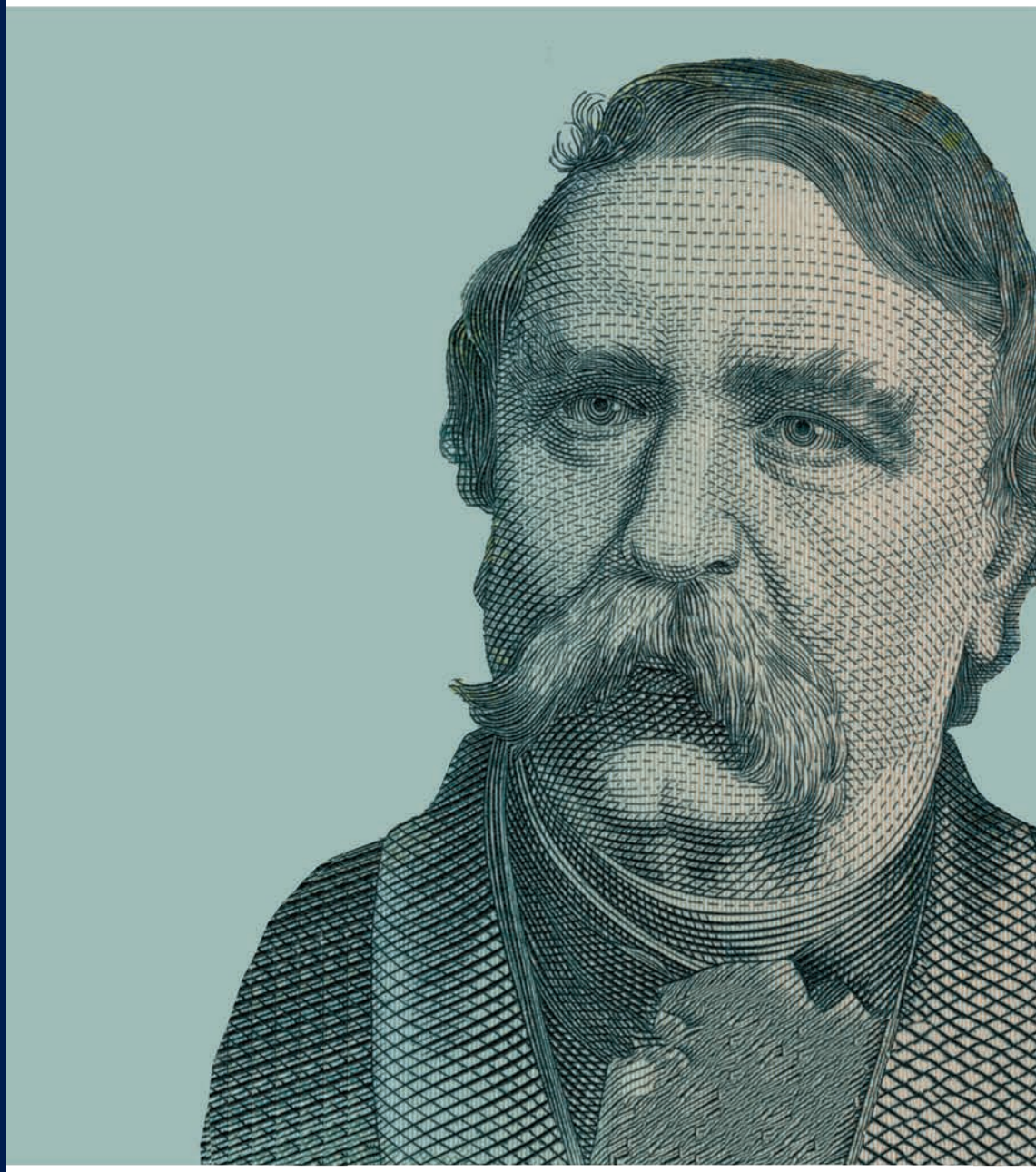
FINANCIAL STABILITY REPORT



2021
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'...a nation is strong where property and independence are guarded by free hands.'

Ferenc Deák

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

The Magyar Nemzeti Bank's fundamental interest and joint responsibility with other government institutions is to maintain and promote the stability of the domestic financial system. The role of the Magyar Nemzeti Bank in the maintenance of financial stability is defined by 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 21th October and 23th November 2021, and those of the Monetary Council following its meeting on 2th November 2021.

This Report is based on information in the period to 31th October 2021. Since data frequency is divergent through the analyses, the analysis horizons may also alter.

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Executive Summary

The Hungarian banking system is stable, and has considerable capital reserves, rendering it resilient to risks. A small proportion of debtors indicated that they were in need of a third phase of the payment moratorium, which significantly reduced future uncertainty about the impact of the program. No major risk can be identified in terms of the sector's lending capacity, and thus a smooth return to market-based lending is ensured. In conjunction with the return of inflation, the rising yield environment results in credit and revaluation risks, but may also improve profitability for the banking sector over the medium term via higher interest margins. During the crisis, the banking system performed well, but looking ahead, banks also need to adapt to the challenges of new entrants and continuous technological development.

Current international economic developments are determined by the return of inflation, while the short-term real economy outlook is uncertain, due to the resurgence of the pandemic. *Depending on the degree of vaccination coverage and economic policy support, the recovery of economies varied in the past half year, and the spread of new virus variants as well as the limited room for further economic support measures make growth prospects uncertain. The rapid pick-up in demand and slower adjustment of supply, linked to supply chain disruptions, raised inflation considerably both in developed and emerging economies, triggering reactions from several emerging market central banks, including the Magyar Nemzeti Bank, which started to tighten interest rate conditions. The world's leading central banks continue their supportive monetary policies, but the persistence of current inflation developments may justify more significant tightening measures.*

The liquidity reserves of the banking sector continued to expand in the first half of 2021, but the central bank instruments contributing to this are being gradually phased out. *In view of the longer maturities of central bank instruments and the continued government securities purchases, the ample liquidity of the banking sector may remain persistent despite the changed monetary policy stance. The rise in short-term yields closely followed the increase in the base rate, while long-term yields rose despite the central bank's active government securities purchases. Taking into account the central bank's liquidity and financing-related regulatory requirements, the financing situation of the banking sector is stable.*

As a result of the subsidised credit programmes, the expansion of the corporate loan portfolio was outstanding in an international comparison as well. *In the third quarter of 2021, corporate loan growth amounted to 9 per cent year-on-year, rising to 15 per cent if complemented with the corporate bonds owned by banks. Government and central bank programmes were major contributors to new loan disbursements in the corporate segment, with subsidised credit programmes accounting for two thirds of the new volume in the first half of 2021. According to our expectations, in the short run depletion of the FGS Go! allocation and the latest wave of the pandemic may decelerate corporate loan dynamics, which may, however, increase again in early 2022. In parallel with the rise of market-based lending and the tightening of monetary conditions, corporate lending rates have risen, but banks expect an expansion in credit demand in all segments in spite of the narrowing of the subsidised programmes.*

Housing loan disbursement rose to a previously unseen level, but this expansion was not coupled with any major increase in financial stability risks. *In the third quarter of 2021, household loans outstanding expanded at a year-on-year rate of 16 per cent. Despite this dynamic credit expansion, there is still room for higher credit penetration in a prudent structure. The home creation subsidies may contribute to the double-digit credit growth in the coming years as well. However, with high demand in the housing market stimulated by subsidies, market stability will only be sustainable if the supply of the housing market increases significantly. The impact of the rising interest rate environment on repayment instalments is mitigated by the gradual amortisation of outstanding variable-rate household loans and the increase in loans with longer interest rate periods. Interest rate risk can be reduced by refinancing with fixed rate loans, but use of this option is low overall.*

Risks may materialise in certain segments of the commercial real estate market, but the exposure of Hungarian banks to the real estate market is low in a European comparison. *In early 2021, the domestic housing market picked up considerably as a result of the new home purchase subsidies, after which the number of sales and purchases stabilised at a lower level in the summer months. House prices continued to increase in the first half of 2021, but the price rise was not coupled with risky lending. The market segments of commercial real estate are surrounded by risks of various degrees. With the expiry of the moratorium, significant risks may materialise in the case of loans funding the hotel sector. In the office market segment, supply is expanding continuously in parallel with low demand, resulting in a rise in the vacancy rate. The situation of the industrial-logistics segment is favourable, but high-volume real estate development projects may exert pressure on rents.*

The phasing out of the general payment moratorium is not causing a drastic surge in the non-performing loan portfolio. *As of mid-2021, 21 per cent of corporate loans and 33 per cent of household loans were in payment moratorium, while 5 per cent of corporate loans outstanding and 23 per cent of the household segment were eligible for the moratorium extension until 30 June 2022. However, a significantly lower proportion of debtors participate in the third phase of the moratorium: 2 per cent of total loans in the corporate segment and 5 per cent in the household segment. The share of loans with elevated credit risk rose by 3 percentage points to 21 per cent in the past half year, while 76 per cent of the total loan portfolio of credit institutions remained problem-free. In terms of portfolio quality, one positive sign is that the phasing out of the programmes did not result in any major rise in non-performing loans in the European countries that terminated the payment moratorium earlier. However, loan losses potentially materialising with the receding of fiscal and monetary support may jeopardise bank profitability in the medium term.*

The after-tax profit of the credit institutions sector is outstanding in an international comparison. *Based on non-consolidated data, the credit institutions sector's profit after tax amounted to HUF 342 billion in the first half of 2021, with declining risk costs and increasing net interest income as the main contributors. Recognition of impairment and provisioning may increase again in view of the extension of the moratorium, and the revaluation of securities recorded at fair value as well as the deterioration in portfolio quality represent further profitability risks. The consolidated capital adequacy ratio of the banking sector reached 19.1 per cent in the first half of 2021, and free capital above the regulatory requirement is at least 4 per cent for the majority of institutions.*

Based on our stress test results, the shock-absorbing capacity of the Hungarian banking sector is robust, almost all institutions would be able to comply with the regulatory requirements related to liquidity and capital position, even under a much more severe, crisis scenario than expected. Looking ahead, in addition to the challenge of new entrants banks must also comply with the suspended and postponed regulatory expectations, but no major risk can be identified with regard to the sector's lending capacity.

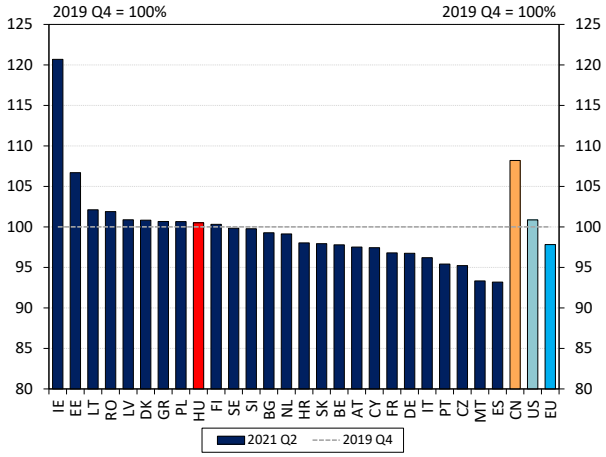
1. External environment: the return of inflation determines international economic developments

During the past half year, the economic outlook has varied from country to country, primarily depending on the degree of vaccination coverage and economic policy support. The spread of new virus variants rendered short-term growth projections uncertain again. In 2021 Q2, the economy of the European Union grew more strongly than expected, but – as opposed to the US and Chinese economies – it did not yet reach its pre-crisis performance. Government debt rose considerably in the EU Member States last year, and the ECB expects it to remain at high levels in the coming years as well. As a result of the low interest rate environment, on the whole, the current level of debt represents a smaller fiscal burden for EU Member States than at the time of the financial crisis, but tightening monetary conditions may elevate refinancing costs and thus fiscal risks.

Due to imbalances in supply and demand, inflation increased significantly both in Europe and the United States in recent months, raising the prospects for central bank tightening measures. Nevertheless, this rise in inflation will be temporary according to the ECB and the Fed communication in Autumn, and thus for the time being they have only tightened monetary conditions by downsizing asset purchases. Looking ahead, with a rise in developed market yields, the tightening cycle may result in turbulences in emerging markets, which is well demonstrated by the fact that in October – in parallel with the market expectation that the Fed and ECB will raise policy rates earlier than previously thought – net capital already flowed out from these countries. Several emerging market central banks assess inflation developments differently from the world's leading central banks and have already started increasing policy rates, helping to boost the protection of their financial markets against market turbulences.

The low interest rate environment continues to have a negative impact on banks' profitability, but over the medium and long term an increase in interest rates may contribute to banks' earning power. This was reflected in banks' improving valuation as well, and the valuation of both European and US banks improved considerably in 2021. In the near future, loan losses potentially materialising with the tapering of subsidies represent the greatest risk for banking sectors. At the same time, according to the experiences of neighbouring countries, so far no major increase has been seen in the non-performing loan portfolio with the end of the moratoria.

Chart 1: Difference between 2021 Q2 and 2019 Q4 GDP in EU Member States, the USA and China

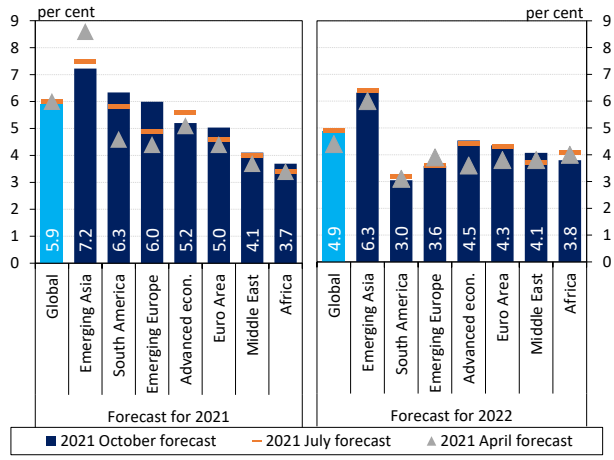


Note: Seasonally and working day adjusted data for European countries, and seasonally adjusted data for China and the USA. Hungary, China, the USA and the EU are marked with different colours. Source: Eurostat, OECD

1.1. Developed and emerging economies may be characterised by different paces of economic recovery

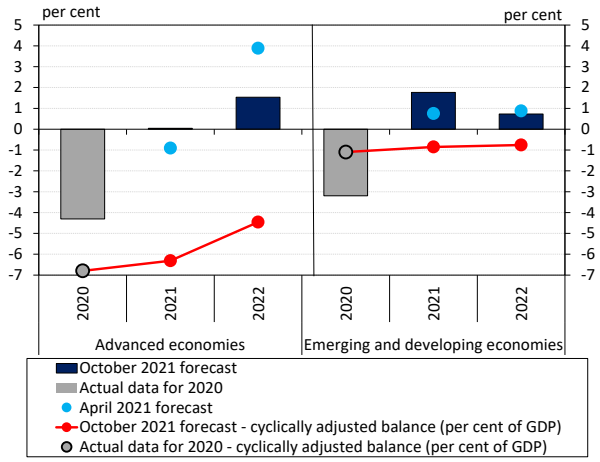
In 2021 Q2, European countries recorded significant economic growth, but GDP at the EU level did not yet reach its pre-crisis value. In Q2, the economy of the European Union grew to a larger degree than previously expected. Nevertheless, the pace of recovery varies across countries, and the economic performance of the majority of Member States has not yet reached its pre-crisis level, in contrast to the US and Chinese economies, where Q2 GDP exceeded the values observed at the end of 2019 by 1 and 8 per cent, respectively (Chart 1). Recovery is typically slower in the countries where the weight of tourism is greater within the gross national product. According to Q2 data, economic output in Ireland, Estonia and Lithuania exceeds the levels seen in 2019 Q4 to the largest degrees. By contrast, Spain and Malta fall more than 6 per cent short of those levels.

Chart 2: IMF forecasts for 2021 and 2022 real GDP growth



Source: IMF

Chart 3: Structural primary balance as a percentage of potential GDP in developed, as well as emerging and developing economies



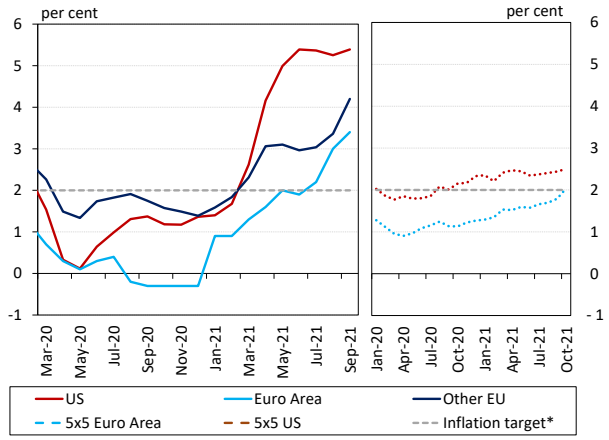
Note: The structural primary balance is the fiscal balance excluding the effect of the economic cycle and other one-off items, as well as interest expenditures. The cyclically adjusted balance is the part of the fiscal balance with the exclusion of the cyclical component. Source: IMF

The countries in the region also show a mixed picture. In 2021 Q2, gross domestic product in Hungary, Poland and Romania already exceeded the pre-pandemic level (by 0.8, 0.5 and 2.2 per cent, respectively), while the Slovak and Czech economies fell short of that level by 1.7 and 4.8 per cent, respectively.

Developed economies may return to the pre-crisis economic path sooner, but the spread of virus variants may cast a shadow over growth prospects. According to the October forecast of the International Monetary Fund (IMF), real GDP growth in the global economy may reach 5.9 per cent in 2021, reflecting a moderate negative revision of 0.1 per cent versus the April and July projections (Chart 2). Global economic growth may reach 4.9 per cent in 2022, but the spread of new coronavirus variants may undermine the outlook. The reduction of the global GDP forecast mainly reflects the negative economic impacts of the supply chain disruptions observed in developed markets as well as the healthcare crisis in Japan. In addition, more significant corrections are seen in less developed countries, which are disproportionately more affected by all global problems. All of this is partly offset by an improvement in the economic outlook for raw material exporting countries and regions. According to the IMF's expectations, by 2024, developed economies may exceed the growth path projected prior to the pandemic by 0.9 per cent, while emerging and developing economies (except China) may remain 5.5 per cent below that. The varying pace of economic recovery is explained – among other factors – by the different degrees of vaccination coverage and economic policy support.

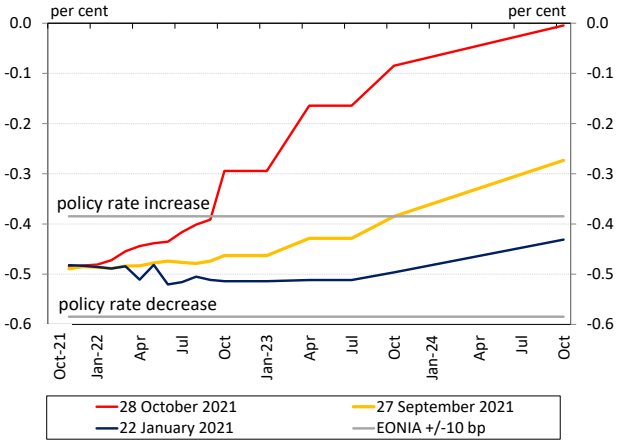
Starting from 2022, developed countries may also tighten their fiscal stance. One common feature of international economic policies in the past period was that decisionmakers strived to mitigate the unfavourable effects of the pandemic in a more active manner and with larger-volume programmes compared to previous crises. As a result, debt indicators surged in most countries.[1] However, the degree of fiscal adjustment varied for the different groups of countries. Developed economies spent significant amounts on crisis management, which contributed strongly to these countries returning to their pre-pandemic growth paths more quickly. Most emerging and developing economies, whose fiscal leeway is narrower, already started to reduce the size of budgetary support in 2021, and according to the IMF, the group of developed economies may also tighten fiscal conditions in 2022 (Chart 3).

Chart 4: Inflation (left panel) and market indicators capturing long-term inflation expectations (right panel) in Europe and the USA



Note: Left panel: The other EU data is the arithmetical average of non-euro area EU Member States' data. The Euro Area and the other EU data is the harmonised consumer price index (HICP), the US data is the Consumer Price Index for All Urban Consumers (CPI-U). Right panel: The 5x5 inflation expectations capture the average, annual inflation expectations of the five-year period starting in 5 years. *The indicated inflation is targeted by the majority of the countries. Source: Eurostat, Refinitiv

Chart 5: Interest rate path expected of the ECB on the basis of market pricing



Note: The EONIA is the overnight interbank interest rate of the euro zone. The EONIA + 10 bp line indicates the point in time by which the market prices in a 10-bp higher level from its current level. Source: Bloomberg

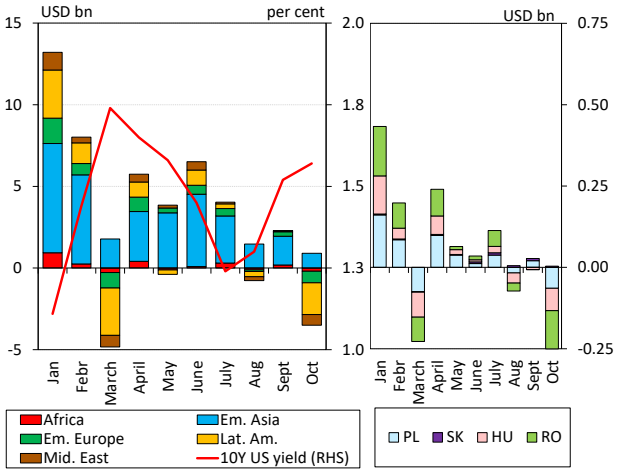
1.2. Inflation developments suggest a rise in the interest rate environment

Inflation increased significantly both in Europe and the United States in the past months. In September, the annual change of the consumer price index accelerated to 3.4 per cent in the euro area (Chart 4), exceeding analysts' expectations. In the view of the European Central Bank, temporary factors are behind the rise in inflation, including the strong increase in oil prices since the middle of the year, the reversal of the temporary VAT cut in Germany and the cost pressures stemming from the temporary shortage of base materials, and price pressure will decrease in 2022. Annual inflation in the United States rose to a level unseen for years, reaching 5.4 per cent in September 2021. The sharp rise in the demand–supply ratio following the easing of restrictions and the support programmes of the federal government played a major role in the higher price increase. At the end of October 2021, the indicator for longer-term inflation expectations in the USA was above the central bank target, standing at 2.5 per cent, while in the euro area the rate of 2.0 per cent is in line with the level targeted by the ECB.

For the time being, the world's leading central banks are still not increasing their policy rates. In 2021 H1, central banks continued their supportive monetary policies, but the timing of monetary tightening came into focus with the increase in inflation. In October, the Governing Council of the ECB left the policy rates unchanged, but at the same time announced that in the fourth quarter it would continue purchases under the Pandemic Emergency Purchase Programme (PEPP) at a slower pace, not amounting to a tapering, but instead to a recalibration. The ECB expects that the PEPP will be terminated at March 2022. In October, the interest rate path taking shape from market pricing shifted upwards over the entire time horizon under review and, based on market pricing, the first 10-basis point interest rate hike is already expected in mid-2022 (Chart 5). However, according to the ECB, market expectations are not in line with the central bank's guidance. At its November FOMC meeting, the Fed announced to reduce monthly asset purchases. The target band was left unchanged at 0–0.25 per cent, and the US central bank may begin increasing interest rates when full employment is achieved, which the economy will reach by next year, according to the Fed chairman.

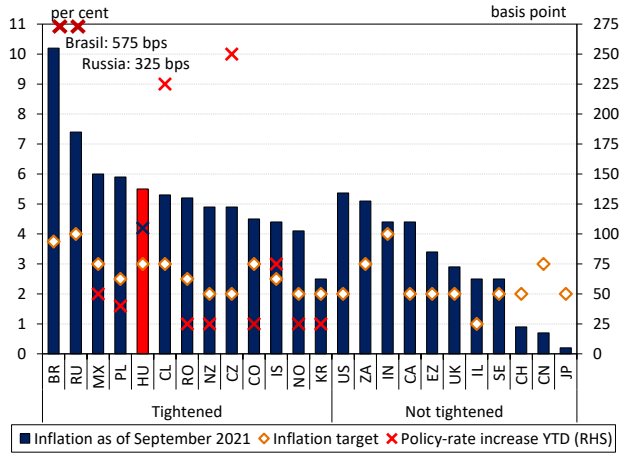
[1] For more details, see: MNB Financial Stability Report, June 2021, Box 1.

Chart 6: Evolution of emerging market capital flows and 10-year US yields



Note: Data captures capital flows until 27 October 2021. Source: EPFR, S&P CIQ, Refinitiv

Chart 7: Changes in inflation, inflation targets and central bank base rates in selected countries

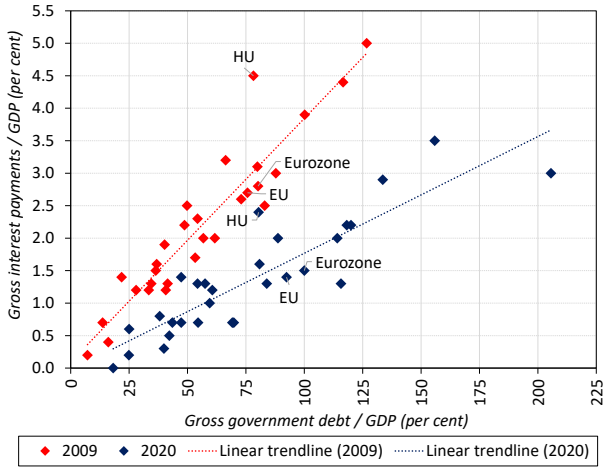


Note: In the case of certain central banks, the inflation target indicates the middle of the inflation target band. The observation period covers data until 8 November 2021. Source: BIS, Refinitiv

A sudden rise in market yields in developed economies may result in turbulence. Following the initial shock caused by the pandemic, emerging market bond funds were characterised by stable capital inflows from May 2020, before major capital withdrawals took place in early 2021 (especially in March), in line with reflation risks (Chart 6). In view of the new virus variants and prospects for a slowdown in the economic recovery, the 10-year US yield declined from 1.74 per cent at end-March to 1.19 per cent in early August, while capital inflows into emerging market bond funds were observed again in parallel with that. Looking ahead, the expected rate hike cycle may cause turbulence in the emerging markets due to a rise in developed market yields, which is well demonstrated by the fact that in October, in parallel with the market expectation that the Fed and ECB will raise policy rate earlier than previously anticipated, net capital already flowed out from emerging countries. Over the short run, another risk in emerging markets may be that the withdrawal from riskier assets has intensified in the past period, in connection with the debt problems in the Chinese real estate market.

Several emerging country central banks began to tighten interest rate conditions, which may mitigate the risks related to the increases in developed market yields. As opposed to developed market central banks, some emerging market central banks have already started to tighten interest rate conditions. Of the countries in the region, the Hungarian, Czech, Romanian and Polish central banks have raised their respective policy rates since May. The largest interest rate hikes were carried out by the Brazilian and Russian central banks, with increases of 425 and 325 basis points, respectively (Chart 7). Inflation rates exceed the target values not only in the emerging economies, but also in most developed economies. Still, the world's leading central banks consider the surge in the price rise to be temporary. Nevertheless, more and more central banks are expected to start tightening their respective monetary policies, and several central banks in developed markets have already started increasing interest rates. However, as emerging market central banks have a different opinion on the persistence of inflation and are taking tightening measures, their financial markets are more protected against market turbulences generated by the rise in developed market yields than in 2013, when the Fed announced the tapering of its asset purchase programme.

Chart 8: Gross government debt and gross interest payments as a percentage of GDP



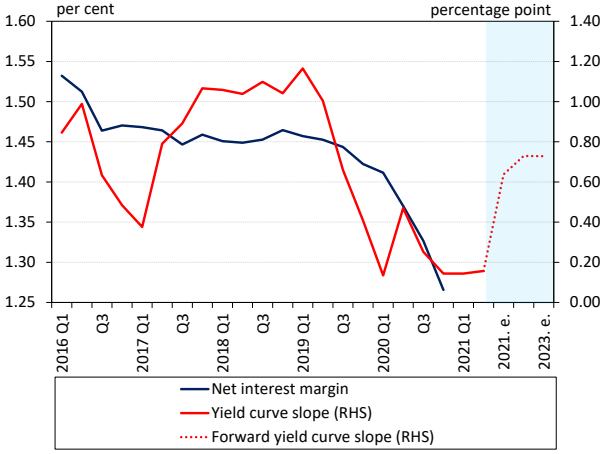
Note: The linear trend lines are fitted on the basis of the ordinary least squares method. Source: ECB

On the whole, the current higher debt level represents a lower fiscal burden for EU Member States than at the time of the financial crisis. Government debt-to-GDP ratios rose significantly last year, with this indicator increasing by 13 percentage points in the European Union. According to the ECB's September macroeconomic forecast, debt levels may remain high in the coming years as well: the gross government debt-to-GDP ratio of the euro area will peak at 99 per cent at end-2021, before declining to 94 per cent by end-2023. At the same time, the current debt represents a smaller fiscal burden for EU Member States than it was following the financial crisis: compared to 2009, gross interest liabilities on government debt as a percentage of GDP were at lower levels in all Member States in 2020 (Chart 8). Nevertheless, an increase in the interest rate environment may make debt refinancing more expensive in the future, particularly for the significantly indebted countries with higher roll-over needs (Box 1).

1.3. Rising interest rate environment supports banks' earning power

The increase in the slope of the yield curve has a positive effect on banks' earning power. Improving 170 basis points in two quarters, the average value of the 12-month return on equity (ROE) of the EU banking sectors reached 6.1 per cent in 2021 Q2, which, however, is mainly attributable to reversals of impairment and not to traditional sources of bank income. The low interest rate environment maintains the pressure on banks' profitability, and the net interest income of the European banking sectors as a ratio of total assets declined further. The persistent low interest rate environment makes banks seek out higher-risk sources of income (e.g. fixed-rate loans with longer and longer maturities), which, in a suddenly increasing interest rate environment, may have a negative impact on the profitability of credit institutions via revaluation. At the same time, with the increase in the interest rate environment, higher interest income may be realised on repricing and newly provided loans, and thus the expansion in banks' interest margin may contribute to banks' earning power in the medium and long term[2] (Chart 9).

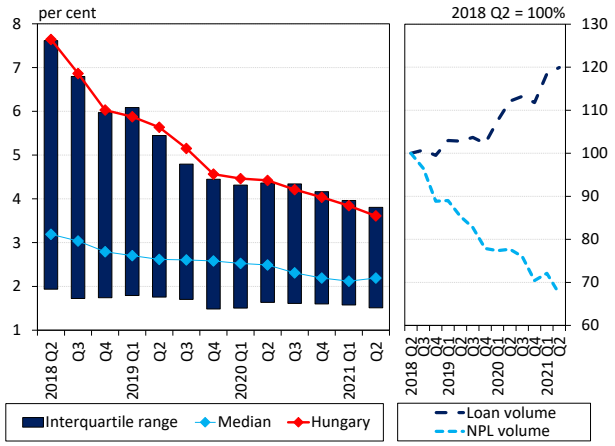
Chart 9: Net interest margin and the slope of the yield curve in Europe



Note: The slope of the yield curve is the difference between the yields of the euro overnight index swap with 10-year and 3-month maturity. Source: ECB

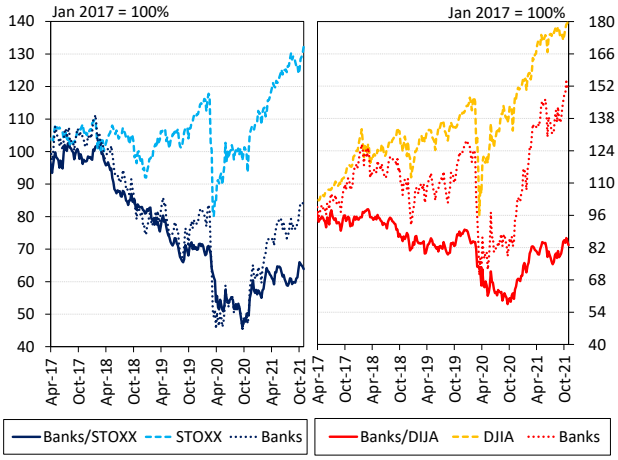
[2] Empirical studies also found typically positive correlation between the increase in the interest rate environment and the growth in bank profit. See, for example: Borio, C. – Gambacorta, L. – Hoffman, B.: The influence of monetary policy on bank profitability.

Chart 10: Distribution of the ratio of non-performing loans (left panel), and loan and NPL volume (right panel) in Europe



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

Chart 11: European and US bank indices and their benchmark indices



Note: DOW Jones US Banks Index (DJUSBK) consists of the 43 largest US banks, whereas the EURO STOXX Banks Index (SX7E) consists of the 22 largest European banks. Source: Refinitiv

The European banking sectors proved to be crisis resistant, but the increase in credit risks may pose a challenge in the near future. One of the biggest risks is the potential materialisation of loan losses as a result of tightening of interest rate conditions and the phasing out of government programmes (moratoria, preferential lending schemes and budgetary supports). The elevated credit riskiness of exposures that are still in moratorium is indicated by the fact that according to data from the European Banking Authority (EBA) the ratio of Stage 2 loans within this portfolio advanced from 16.7 per cent in 2020 Q2 to 28.2 per cent in 2021 Q2, while their share is 24.4 per cent in the case of exposures that left the moratorium.[3] Looking ahead, however, it is positive that on the basis of the experiences of neighbouring countries, for the time being no significant delinquency ratio is observed with the end of the moratoria. On the whole, following a slight increase in Q1, the non-performing loan portfolio of the European banking sectors shrank again in 2021 Q2, and thus – in parallel with an expansion in loans outstanding – the decrease in the NPL ratio, which had been observed for years, continued (Chart 10).

The increased focus on the rising interest rate environment was reflected in banks' improving valuation as well. Although banking systems are still subject to significant risks, both the absolute and relative valuations of European and US banks improved considerably during 2021. In 2021, banks outperformed the wider market: the Dow Jones US Banks Index and the Euro STOXX Banks Index increased by 41.0 per cent and 38.0 per cent, respectively, since the beginning of the year, whereas the benchmark indices rose by 18.7 and 21.2 per cent, respectively (Chart 11). The main reason for the relative outperformance of bank shares is that the expectations related to the increase in the interest rate environment contribute to the earning power of the banking sectors in both regions. At the same time, banks' relative valuation is still much lower compared to that of other asset classes: at end-August 2021, the market value of the MSCI World Index[4] was 24 times higher than the profit realised at the annual level by the companies constituting the index (P/E ratio), while the MSCI World Banks Index[5] had a mere 12-fold price-to-earnings ratio.

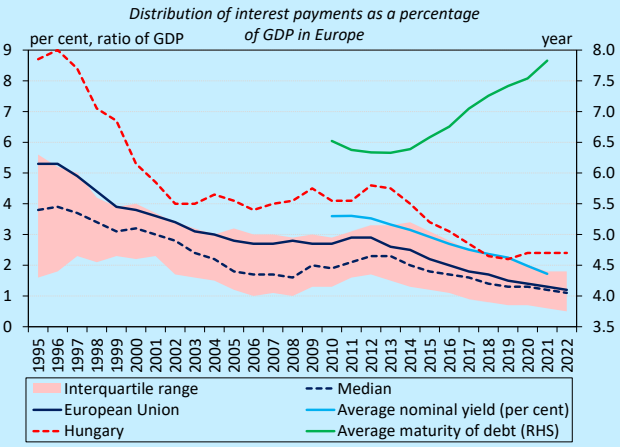
[3] For further information see: EBA Risk Dashboard.

[4] The MSCI World Index comprises 1,557 shares from 23 developed markets.

[5] The MSCI World Banks Index comprises the shares of the largest banks in 23 developed markets.

BOX 1: MATURITY STRUCTURE OF GOVERNMENT DEBT IN EUROPEAN COUNTRIES

Over the past one and a half years, fiscal stimuli have resulted in increases in government debt in the EU Member States, but in view of the harmony between fiscal and monetary policies the interest burden on this debt did not increase. In order to reduce the economic effects of the pandemic, European economies reacted with fiscal stimulus of a previously unprecedented degree, which – together with lower government revenues and GDP and higher budget deficits in most of these countries – raised debt indicators considerably. In the European Union and in the euro area, the gross government debt-to-GDP ratios rose from 79 percent and 86 percent, respectively, prior to the outbreak of the pandemic to 93 percent and 101 percent, by the end of the first quarter of 2021, while in a number of countries (Cyprus, Greece, Spain and Italy) this indicator rose by more than 20 percentage points in this period. At the same time, due to the temporarily lower inflation in view of the recession, central banks also had an opportunity to support the economy and the stability of the government securities market, and thus the deterioration in the financing environment as a result of the increasing government debt was offset by central banks' supportive monetary policy. Thanks to central bank programmes, between March 2020 and August 2021 the average nominal yield of government bonds issued in the euro area fell 50 basis points, which was also reflected in a decrease in the interest burden on government debt: by end-2020, the interest burden-to-GDP ratio had dropped to a historical low, i.e. 1.4 percent, in the European Union.



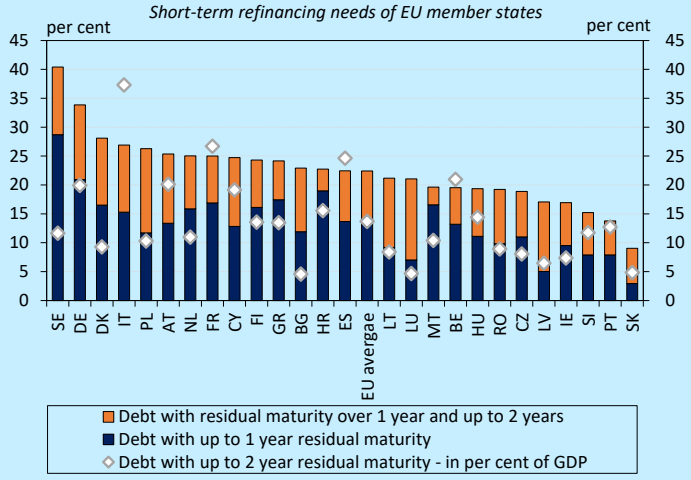
Source: ECB

European economies increased the amount of long-term government securities issued, which resulted in a longer average residual maturity of the debt. The interest burden-to-GDP ratio declined in parallel with an increase in the stability of the funding structure of debt in the EU: the average residual maturity of the bond portfolio rose by some 4 months to 7.8 years between December 2019 and August 2021. This means that during the past one and a half years European economies increased the amount of long-term bonds issued in order to reduce the roll-over risk. In the case of Hungary the increase in the average residual maturity contributed to a rise in interest expenditures,[6] and thus the declining trend of interest expenditures, which had lasted since 2013, was followed by growth in 2020. According to the ECB's communication, supportive monetary policy may also remain in place in the euro area in the coming years, which may continue to keep the yields on EUR-denominated bonds low. In line with that, the European Commission forecasts a further decline in the interest burden-to-GDP ratio for this year and for 2022 as well. In the longer run, persistence of the current inflation developments may warrant a tightening of interest rate conditions in the euro area, but the recovery of economies may stabilise the interest burdens as a percentage of GDP even if the costs of funds rise.

[6]Due to the maturity premium, yields of longer-maturity bonds are typically higher than the yields of short-term bonds.

Some Member States may face significant refinancing needs in the coming years. Another important question in terms of the sustainability of debt is how significant the short-term refinancing need of the repayments due in the future will be, i.e. what proportion of the bonds outstanding will mature in the coming years. Based on August 2021 data, as a percentage of bonds outstanding, the Swedish and German economies face the highest repayment obligation. In these countries, some 21–29 percent of the debt matures within one year and 12–13 percent within another year, i.e. Germany and Sweden will have borrowing requirements amounting to 34 and 41 percent of government debt, respectively, exclusively in connection with maturing bonds. At the same time, it is important to emphasise that in the case of these two countries the repayments due cannot be considered excessive compared to the size of the economy. The same cannot be said of significantly indebted Italy, where the debt maturing within two years exceeds 37 percent of GDP, which may mean rising refinancing costs because of the risks related to the sustainability of debt even if the interest rate environment remains low. In terms of short-term funding, Hungary is in a favourable position: 11 percent of the government debt matures within one year and another 8 percent within two years. In terms of the financing of government debts, bonds with long residual maturities but variable interest rates may constitute another problem. In a possibly rising interest rate environment, they may generate additional fiscal burdens, although these types of bonds have a relatively low weight in European government debt financing.

Short-term refinancing needs of EU member states

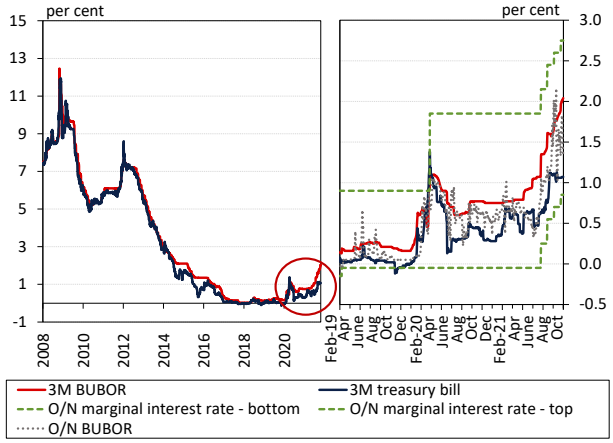


Note: Based on non-conolidated data. Source: ECB

2. Market and bank liquidity: rising yields, ample banking sector liquidity

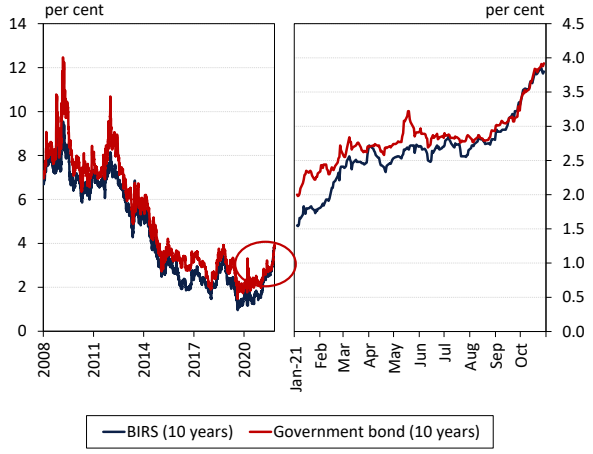
The rise in short-term yields closely followed the increase in the base rate in the first months of the monetary tightening cycle, while long-term yields increased even in conjunction with the central bank's active government securities purchases. The banking sector's liquidity reserves expanded further, but the pace of expansion is declining with the gradual phase-out of the central bank instruments contributing to the expansion in liquidity. At the same time, due to the longer maturity of the liquidity-increasing instruments, the ample liquidity of the banking sector may remain in place in spite of the changed monetary policy stance. Also considering the indicators under review as well as the central bank's liquidity and financing-related regulatory requirements, the financing situation of the banking sector is stable.

Chart 12: Developments in short-term yields



Source: Government Debt Management Agency, MNB

Chart 13: Changes in long-term interbank interest rate swaps and government bond reference yields



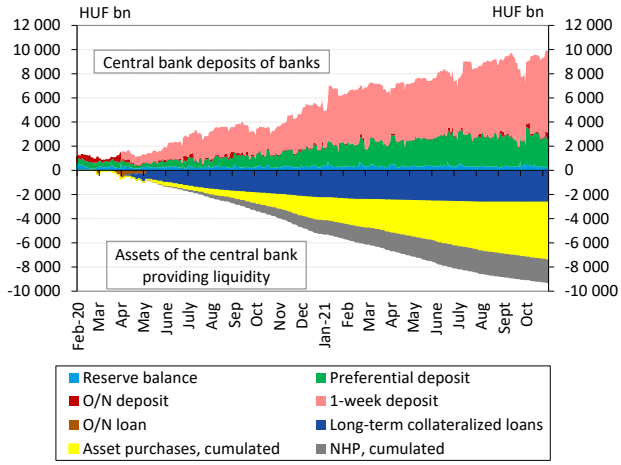
Source: Government Debt Management Agency, MNB

2.1. Short-term and long-term yields also increased

The central bank's tightening measures resulted in an increase in short-term interest rates. In the interbank unsecured money market, transactions within one month closely followed the tightening in monetary conditions, and the 3-month BUBOR rose to 2.04 per cent at end-October (Chart 12). From the beginning of the June tightening cycle until end-September, the MNB raised the interest rate both on its one-week deposit and the central bank base rate by 120 basis points to 1.8 per cent. The interest rate on overnight deposits and the overnight collateralised credit facility increased by 90 basis points, and thus the interest rate corridor became symmetrical, with the lower boundary changing to 0.85 per cent and the upper boundary to 2.75 per cent.

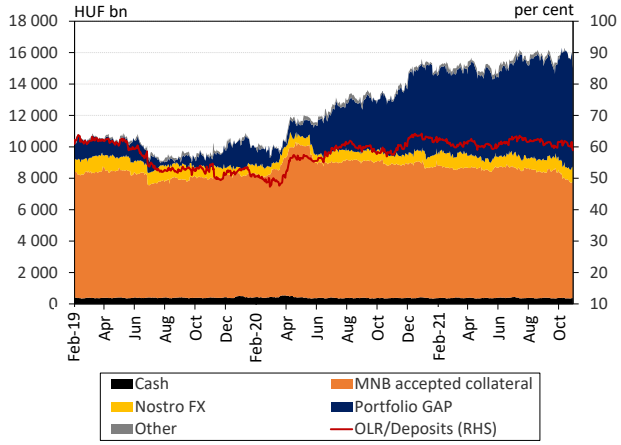
Even with the MNB's active presence in the market, long-term yields increased. Domestic long-term government securities market and interbank yields have continued to rise (Chart 13). Since the beginning of the central bank's tightening cycle, 10-year interbank yields increased by 108 basis points, while government securities yields with the same maturity rose by 103 basis points. Although long-term yields are still low in historical terms, due to an increase in international inflation risks, compared to the beginning of the year, 10-year interbank swap and government securities yields rose by 225 and 192 basis points, by end-October. In August, the Monetary Council decided to start a gradual phasing out of the government securities purchase programme, while considering the aspects of maintaining market stability. Nevertheless, it is starting the reduction of purchases with shorter-maturity government securities, therefore the central bank still has a material impact on long-term yield developments.

Chart 14: Developments of central bank deposits of banks and assets of the central bank providing liquidity



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

Chart 15: Decomposition and development of banks' operative liquidity reserves



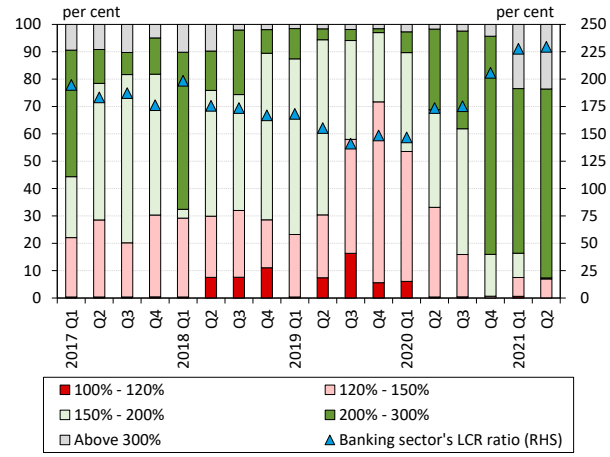
Note: The portfolio gap denotes the contractual net flows of treasury operations within 30 days from the date of data reporting with the following content: interbank loans and deposits, MNB deposits, repos, securities other than own issued, deposits over HUF 5 billion, and derivatives. Classified into the "other" category: ECB eligible collateral, cash flows from own securities, deviation from and changes in reserve requirements. Source: MNB

2.2. Ample liquidity in the banking sector may remain in place, despite the change in monetary policy

Growth in the liquidity of the banking sector is supported by the central bank's government securities purchases at a more moderate pace. In parallel with tightening interest rate conditions, the central bank started phasing out its crisis management tools targeting long-term yields. Accordingly, in June 2021, upon approaching depletion of the HUF 3,000 billion allocation, the MNB announced the closing of the FGS Go!, and with its July decision it terminated the application of the long-term collateralised credit facility. Then, in August, it began to gradually phase out the government securities purchase programme. Pursuant to the September decision of the Monetary Council, the weekly amount of the MNB's government securities purchases until December 2021 was determined as HUF 40 billion, as a result of a reduction from HUF 60 billion in two steps. The MNB continues to sterilise most of the banking sector liquidity with the one-week deposit facility, the average level of which amounted to some HUF 6,250 billion in October (Chart 14). The monthly average of total central bank liquidity rose to above HUF 9,400 billion by the end of the period under review.

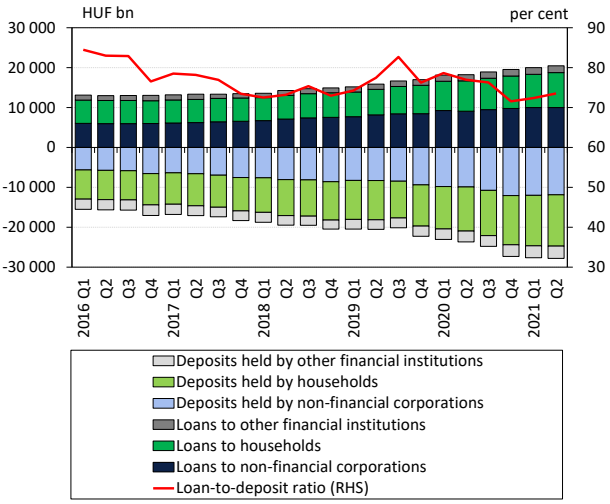
The banking sector's operational liquidity reserves are expanding more slowly than before, but high liquidity may still persist for years. The sector's operational liquidity reserves expanded by some 3 per cent during the past half year, amounting to an average of HUF 15,900 billion in October 2021 (Chart 15). The expansion observed in the past half year is already significantly smaller than that observed in the same period of 2020, when the liquidity-providing measures of the central bank and the government were introduced. The increase in liquidity reserves is still fundamentally determined by the rise in contractual net flows of treasury operations (portfolio gap). This item is almost entirely made up by inflows of deposits placed with the MNB one-week, preferential and O/N, the increase in which is directly or indirectly due to the MNB's and the government's crisis management measures. The central bank's asset purchases and the decline in refinancing and collateralised loans provided by the central bank reduce banking sector liquidity, but the long average maturity of central bank loans, the gradual phasing out of asset purchases and the introduction of the central bank's FGS Green Home Programme point to a persistently high level of banking sector liquidity buffers.

Chart 16: Distribution of individual institutions' LCR levels weighted in proportion to the balance sheet total and changes in the LCR of the banking sector



Source: MNB

Chart 17: Decomposition of the loan-to-deposit ratio of the banking sector



Source: MNB

The banking sector's liquidity buffers grew further, and the distribution across individual institutions also improved. The further expansion in the sector's liquidity was also reflected in the developments in the liquidity coverage ratio (LCR), which rose to 229 per cent by end-June 2021 (Chart 16). Accordingly, the stock of high-quality liquid assets in the banking sector was more than twice as much as presumed outflows of funds in the case of a liquidity shock. In parallel with the increase in the sectoral average, the distribution of the liquidity buffer was also favourable, since the share as a percentage of balance sheet total of the banks that had an LCR exceeding 200 per cent was 93 per cent, while all credit institutions had buffers exceeding the regulatory limit by at least 20 per cent at end-June 2021.

2.3. Financing of the banking sector is stable, and its currency structure is balanced

Lower loan amortisation as a result of active lending and the loan moratorium caused a slight rise in the loan-to-deposit ratio. Domestic sectors' loans outstanding increased by HUF 918 billion in 2021 H1, while deposits expanded by HUF 512 billion. As a result, the loan-to-deposit ratio, which captures financing risks, rose by nearly 1.9 percentage points in the past half year, reaching 73.5 per cent at end-June 2021 (Chart 17). Accordingly, the increase in the indicator was a result of the expansion in loans exceeding that in deposits, and this expansion is also partly explained by the non-amortising stock as a result of the loan moratorium. The favourable trends in lending are supported by government programmes as well as by households' and companies' high propensity to invest. At the same time, demand deposits continue to account for nearly four fifth of all deposits. In spite of the rise, the loan-to-deposit ratio is well below the 100-per cent level, which is considered the equilibrium level, deposits continue to provide favourable financing to the actors of the sector. The central bank also monitors the digital deposit collection of alternative financial service providers, which may make traditional banks compete for the collection of funds (Box 2).

BOX 2: THE IMPACT OF FINTECH ACTORS' EXPANSION IN PAYMENT SERVICES ON THE TRADITIONAL BANKING SECTOR

In parallel with international trends, emerging innovative FinTech actors are carving out larger and larger shares of the market of payment services in Hungary as well, exposing traditional banks to significant competition. At the same time, the majority of new actors in payment services typically offer a much narrower choice of services than traditional banks, which is partly attributable to their respective business strategies as well as to the status and operating licence of the given institutions. It also means that for the time being they are unable to completely replace the services portfolio of commercial banks.

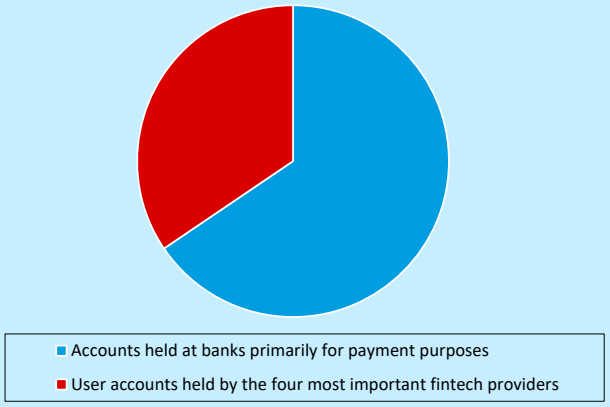
In terms of payments, the solutions applied by the new actors may typically be classified into three categories: use of traditional infrastructures; additional solutions relying upon traditional infrastructures; solutions circumventing traditional infrastructures.

- The first category comprises those services that rethink processes that are long and costly in the case of traditional infrastructures in a special market segment, often offering faster and cheaper services to users. They provide electronic payment services in cases when otherwise the infrastructure is underdeveloped. One of them is the solution of Wise (previously TransferWise), the essence of which is that they decompose international credit transfers into two domestic transfers by inserting a closed central network.
- The second category typically comprises innovative solutions based on the card payment method, primarily including mobile wallets and services allowing transactions with digitalised cards (e.g. Apple Pay, Google Pay, Simple by OTP). Most of them are able to provide better user experience than traditional card payments, although they cannot go beyond the limits of the card infrastructure.
- The solutions circumventing traditional infrastructures are already based on more complex approaches, representing innovation on the side of the core infrastructure as well, but at the same time they intend to address market problems by creating closed, isolated solutions. Traditional examples for the above include the various e-money based systems, such as Revolut, PayPal or Barion.

One common element of closed solutions is that they contribute strongly to the development of further market fragmentation by creating services that are not interoperable. Accordingly, the payment solutions that appear in parallel with one another and operate in an isolated manner cause inconvenience to consumers and retailers that accept electronic payment transactions as well as to bill issuers, as different services are available in different payment situations. It also means that the potential coverage of all payment situations requires the combined use of various services and sharing the available liquidity among them. Following this logic, as the case may be, e-money based systems theoretically allow the placement of a larger amount of liquidity outside the banking sector. At the same time, it is important to note that there are strict rules for the balances stored in solutions of this kind. It is the service providers' obligation to hold the funds deposited by customers in a separated manner, on a deposit account, which also means that they cannot be used (for example for lending) as traditional bank deposits can be.

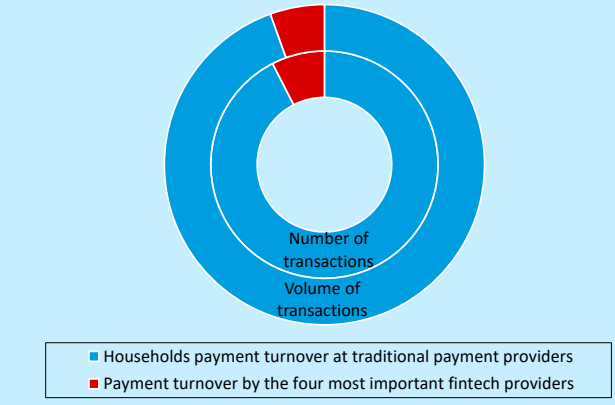
Some of the data available to the MNB also show that, in addition to traditional bank relationships, more and more domestic consumers are using certain services based on some kind of closed solution. The four most important innovative FinTech service providers present in Hungary (PayPal, Wise, Revolut and Barion) together keep the records of nearly 4 million user accounts, which is a certainly high number in light of the nearly 7 million consumer accounts held primarily for payment purposes by traditional banks. At the same time, it is also clearly visible that the turnover handled by these actors is marginal compared to either traditional payment cards or credit transfer turnovers. This shows that consumers use these services only in a limited number of payment situations. Consequently, potentially only lower liquidity and for a relatively shorter time is kept in these systems. This is also corroborated by the fact that many of the accounts opened by customers are temporarily inactive in the case of services used primarily due to security considerations and in connection with online payments (e.g. PayPal).

Number of consumers at banks and fintech providers



Source: MNB

Payment turnover of households at banks and fintech providers

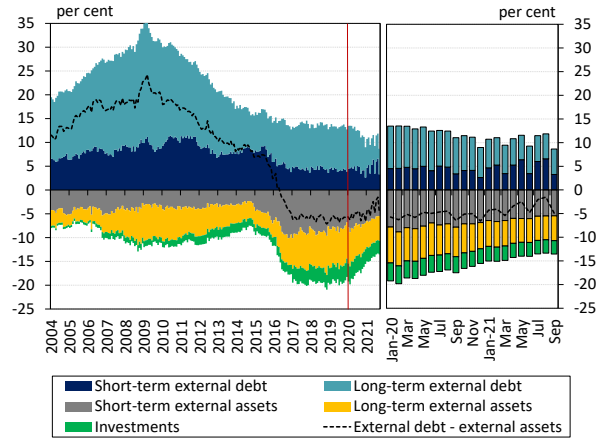


Source: MNB

This may also partly be a reason why some alternative service providers are starting to move towards providing a wider range of services to their users, and within that, *inter alia*, they have been targeting the savings market as well with various deposit collection services. For that, however, they already need to have a bank licence, as a result of which, from regulatory and financial stability aspects, the liquidity held with them falls under an assessment similar to that of traditional banks' liquidity, and thus the same rules also apply to it. As part of this process, having the necessary licences, Wise, for example, already keeps payment accounts for its customers, and is a member of the MNB's real-time gross settlement system (VIBER) as well as of the interbank clearing system operated by GIRO Zrt. In addition, Revolut obtained the licences necessary for bank operations on the territory of the European Union, and thus it already offers deposit collection services to its customers in Hungary as well.

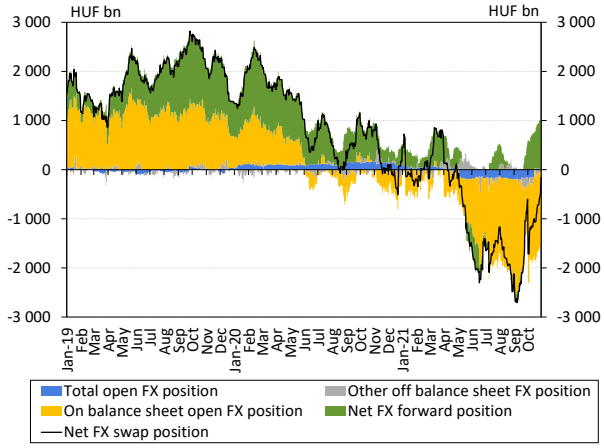
In summary, some of the challengers belonging to the FinTech sector offer payment services to customers that can be used in a limited number of situations, entailing a low risk of higher liquidity outflows from the traditional banking sector. At the same time, innovative service providers have started to shift towards providing all-around banking services, and thus they essentially are becoming integrated into the traditional banking sector, both in terms of conducting their business and complying with the same legislation.

Chart 18: External assets and liabilities of the banking system in proportion to the balance sheet total



Note: By original maturity. Source: MNB

Chart 19: Changes in the banking sector's FX swap position and in other components of the total FX position

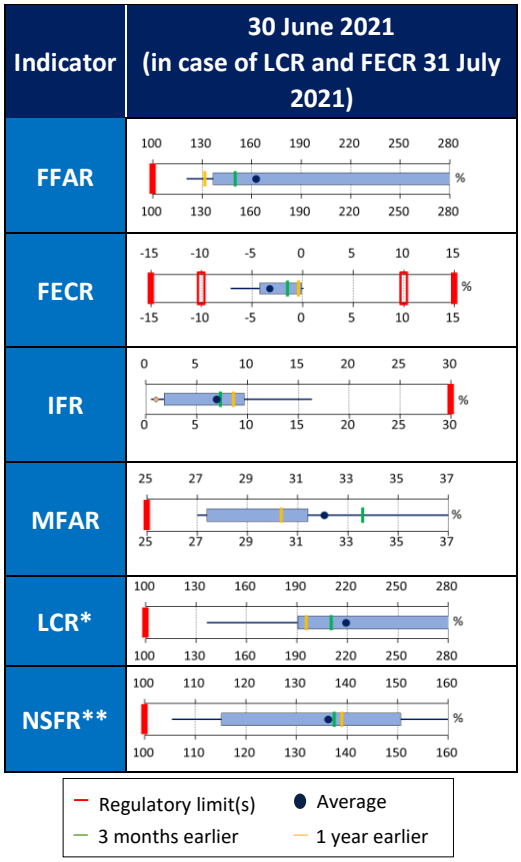


Note: Banking sector, excluding data from EXIM, MFB and KELER. Net FX swap position = (On balance sheet open FX position – Total open FX position) + Net FX forward position + Other off-balance-sheet FX position. Source: MNB

The external liabilities and assets of the banking sector are balanced. Compared to the end-March 2021 value, the ratio of external assets to balance sheet total declined by nearly 1.4 percentage points to 13.4 per cent, while that of external liabilities decreased by 0.8 percentage point, amounting to 8.6 per cent at end-September 2021. As a result of the changes, the surplus of external assets fell by 0.6 percentage point compared to external liabilities, and amounted to 4.9 per cent of the balance sheet total at the end of the period under review (Chart 18). The external funds of the banking sector represented stable financing for the sector in the pandemic situation as well. Both the stock of short-term external liabilities and their ratio to the balance sheet total increased compared to end-2020, but are still close to historical lows, and do not pose any major risk in terms of the financing of the banking sector.

The increase in on-balance-sheet FX liabilities occurred in parallel with growth in the net FX providing swap holdings in the past half year. In 2020, on average the banking sector still had a net foreign exchange buying FX swap position of HUF 1,000 billion, which turned into a net FX providing position of approximately HUF 1,320 billion on average as of the end of 2021 Q1 (Chart 19). The evolution of the FX providing net FX swap position had a significant impact on the change in the on-balance-sheet FX position: the FX asset surplus, amounting to around HUF 180 billion on average in 2020, turned into an FX liability surplus of an average HUF 1,300 billion since end-March 2021 as a result of domestic FX deposit inflows and a decline in external FX assets. The on-balance-sheet FX liability surplus increase was also reflected in the changes in the indicators that regulate foreign exchange funding.

Chart 20: Compliance with liquidity and funding regulations in the banking sector



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. * Excluding mortgage banks and housing savings banks. ** NSFR entered into force on 28 June 2021, first reported data for 30 June 2021, earlier data points are estimates. Source: MNB

Banks' liquidity and funding position regulated by macroprudential requirements strengthened further in 2021 H1. Favourable developments were observed in the sector-level and, in the case of most banks, individual changes in liquidity risks (Chart 20). Sector-level dependence on riskier financial corporation funds declined in the past period, primarily as a result of new funds obtained within the framework of central bank credit programmes. Since 1 July 2021 the mortgage funding adequacy ratio (MFAR) requirement, which provides preferential treatment for the issuing of green mortgage-based liabilities, has been met by banks, in conjunction with significant buffers. From 1 October 2022, other, tightening type amendments to the regulation that further strengthen the forint maturity match will also enter into force. Banks were able to meet the 100-per cent expected level of the EU-level net stable funding ratio (NSFR), which entered into effect on 28 June 2021 and requires institutions to have stable funding over a 1 year time horizon, with minimum adjustment. This was facilitated by the fact that the institutions had already been preparing for the introduction of the indicator for a longer time, and the new regulation does not mean any significant restriction considering their current business models and funding structures.

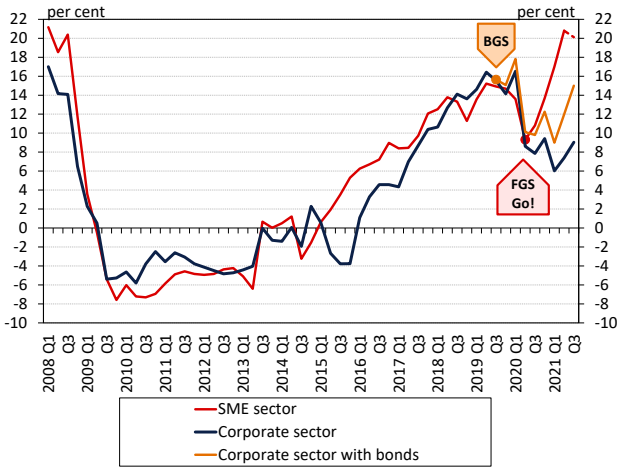
3. Trends in corporate lending: even with the dominance of market-based lending, portfolio growth is expected

The expansion of the domestic corporate loan portfolio is still outstanding by international standards, with the annual growth of 9 per cent recorded in Q3 ranking as the second highest rate in the European Union. As a result of the subsidised credit programmes, SME loans outstanding increased by 20.1 per cent between 2020 Q3 and 2021 Q3, according to preliminary data, while outstanding loans to large corporations decreased by 3 per cent. In 2021 H1, new disbursement exceeded the figure for the same period of 2019 by 23 per cent, with the FGS Go! accounting for 41 per cent of new disbursements. The importance of the Bond Funding for Growth Scheme in corporate fund raising is steadily increasing. In August 2021, the sum of the funds obtained within the framework of the scheme reached 16 per cent of credit institutions' corporate loan portfolio.

Based on responses to the Lending Survey, there was no major change in credit conditions in Q3, with a further pick-up in demand, which may continue even looking ahead, after the closing of the FGS Go!. In the first three months following the nearly complete depletion of the FGS allocation, the disbursement of new SME loans was 12 per cent above the level observed two years before in the seven sectors with the largest loan portfolios. As a result of the interest rate hikes and the increasing share of market-based loans, average interest rates on SME loans have increased by roughly 100 basis points since the start of the interest rate hike cycle. According to our forecast, in view of the phasing out of the FGS Go! and the fourth wave of the pandemic, corporate loan dynamics may temporarily decelerate slightly, but may increase again in mid-2022.

3.1. Mainly SME and HUF-denominated loans outstanding expanded as a result of the subsidised schemes

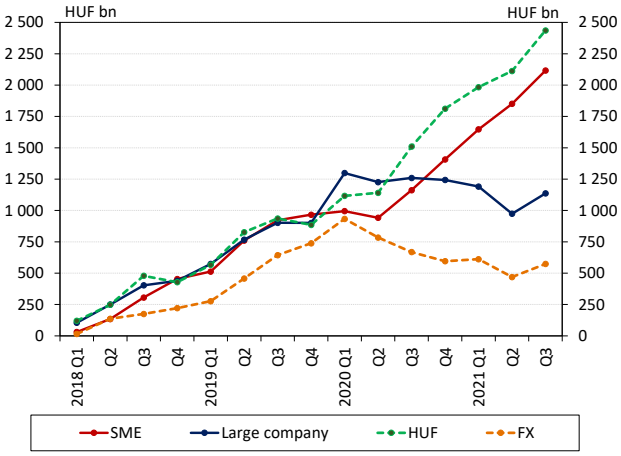
Chart 21: Annual growth rate of loans outstanding of the overall corporate and SME sector, as well as supplemented annual growth rate with bonds in the credit institution sector



Note: Transaction based, prior to 2015 Q4, data for SMEs are estimated based on banking system data. Upon calculating the annual growth rate complemented with bonds only the bonds held by credit institutions were taken into account. 2021 Q3 SME data are preliminary. Source: MNB

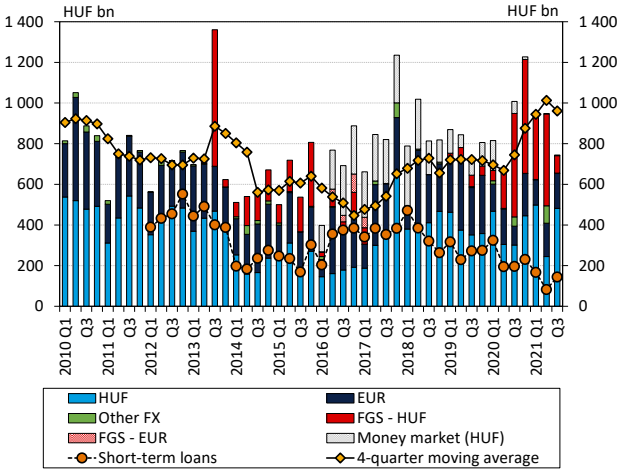
Annual growth in the corporate loan portfolio was outstanding by international standards as well. In 2021 Q3, the annual growth rate of the loan portfolio of the entire corporate sector accelerated to 9 per cent, primarily as a result of an expansion of more than HUF 250 billion in SME loans (Chart 21). Taking into account transactions in corporate bonds held by banks as well, a growth rate of 15 per cent was reached in September, reflecting the increasing importance of bond financing in corporate borrowing. According to preliminary data, annual SME lending growth of 19.7 per cent was achieved in 2021 Q3, with major contributions from the subsidised credit programmes. By contrast, on a transaction basis, outstanding loans to large corporations declined by 3 per cent compared to September 2020, according to preliminary data. In a European comparison, the second highest year-on-year corporate growth rate materialised in September, exceeding the averages of the euro area and the Visegrád countries by roughly 8 percentage points.

Chart 22: Cumulated transactional expansion of the corporate loans outstanding by company size and denomination



Source: MNB

Chart 23: New corporate loans in the credit institutions sector



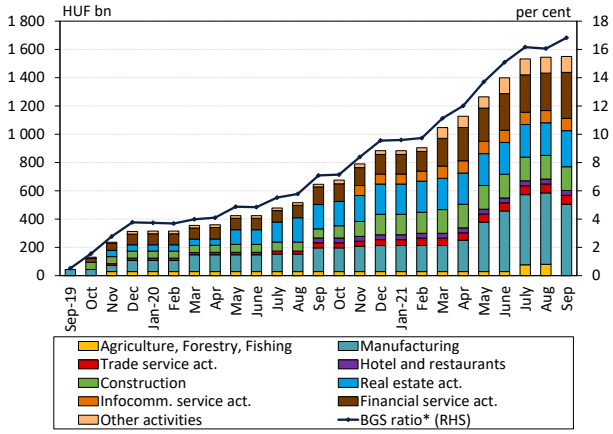
Note: Without overdraft facilities Source: MNB

The dynamic expansion in forint loans continued in 2021 as well. In the first three quarters of 2021, forint loans expanded by more than HUF 600 billion based on transactions, while the FX portfolio declined by HUF 21 billion (Chart 22). Within the HUF 710 billion increase in SME loans, fixed-rate products expanded to the greatest degree, by HUF 552 billion. The decline in loans outstanding observed in the case of large corporations was attributable to a fall of roughly HUF 270 billion in variable-rate loans, and thus the previously observed shift towards fixed-rate schemes remains in place. The largest expansion took place in the portfolio of forint loans with maturities over 5 years, which rose by slightly more than HUF 400 billion in the first three quarters. In a sectoral decomposition, a heterogeneous picture is taking shape: the loans outstanding of the transportation, warehousing, the financial and insurance activities[7] and information and communication sectors were stagnant, while stronger expansion took place in real estate activities and trade as well as vehicle repair sectors.

The share of the FGS Go! within new disbursements was outstanding in 2021 H1. New loan disbursements amounted to nearly HUF 1,900 billion in total in 2021 H1, exceeding the figures of 2020 and 2019 by 41 per cent and 23 per cent, respectively (Chart 23). Central bank and state subsidised credit schemes accounted for two thirds of the new volume, with the FGS Go! having the largest, 41-per cent share. Examining corporate sector at the micro level, a low percentage of subsidised loans went to unviable or inactive companies based on financial indicators (Box 3). The FGS Go!, which expired in the third quarter, has been supporting lending to a lesser extent, accounting for 11 per cent of new disbursements, bringing the share of market loans in new disbursements to over 75 per cent. New disbursements in the third quarter, dominated by market-based loans, were 15 per cent higher than in the same period in 2019.

[7] Within the sector of non-financial corporations, the financial and insurance activities subsector is mostly comprised of holding companies.

Chart 24: Cumulated amount of issued bonds under BGS by sectors and their share of the total corporate loans and bonds outstanding



Note: BGS ratio*: The ratio of the Bond Funding for Growth Scheme to the banks' corporate loans outstanding. Cumulated data. Source: MNB

The importance of the Bond Funding for Growth Scheme is increasing steadily, and the value of issuances exceeded 16 per cent of the corporate loan portfolio. Up to September 2021, 86 bond series of 74 companies with a total value of HUF 1,640 billion were issued within the framework of the BGS launched in July 2019 (Chart 24). As a result, the sum total of the funds raised under the scheme exceeded 16 per cent of credit institutions' corporate loan portfolio. By sectoral decomposition, manufacturing and transactions related to the real estate market (real estate activities, construction) were the most relevant. The average face value of the bond series issued was HUF 19 billion, the volume-weighted average yield amounted to 2.5 per cent, while the average maturity was 9.5 years. The increasing importance of the scheme is shown by the fact that 19 per cent, 35 per cent and 46 per cent of the funds borrowed were realised in 2019, 2020 and in the first nine months of 2021. In terms of bond issues, investment projects and acquisitions were the primary loan purposes. In the case of companies where outstanding loans declined in the month following the auction, the decrease in loans as a percentage of bonds issued amounted to 14 per cent, indicating a low level of loan refinancing.

BOX 3: LOANS OUTSTANDING OF COMPANIES UNVIABLE IN THE LONG RUN AND THEIR SUPPORT

In our box, we examine the level of financial stability risk posed by those companies in Hungary whose profitable operation is questionable in the longer run. The number of unviable companies, often called 'zombie' companies in the literature, has followed an increasing trend in the world since the late 1980s,[8] and their ratio is high mostly in those countries where the banking sector is insufficiently regulated (e.g. there are no strict capital requirement criteria). The relevance of our analysis is corroborated by the fact that according to the ECB's 2021 analysis[9] the share of zombie companies accounted for a non-negligible portion, i.e. some 3.4 per cent of the operating undertakings in the euro area in the period prior to the outbreak of the pandemic. The balance sheet total of a typical (median) zombie company is 20 per cent smaller, but its leverage ratio is nearly 60 per cent higher than those of a sound company. The timeliness of our analysis is corroborated by the fact that the government programmes introduced as a result of the pandemic (moratoria, subsidised credit and guarantee schemes, wage subsidies) as well as the favourable financing environment may have contributed to the survival of inefficiently operating companies as well. The rise in the yield environment in parallel with the normalisation of the economy and the receding of fiscal supports allow the reorganisation of the economy, which is favourable in terms of long-term growth as resources are involved in production again, but it may also pose a financial stability risk in the short run. In this context, using domestic data, our objective is to estimate the number of zombie companies and to examine the main features of this group of companies.

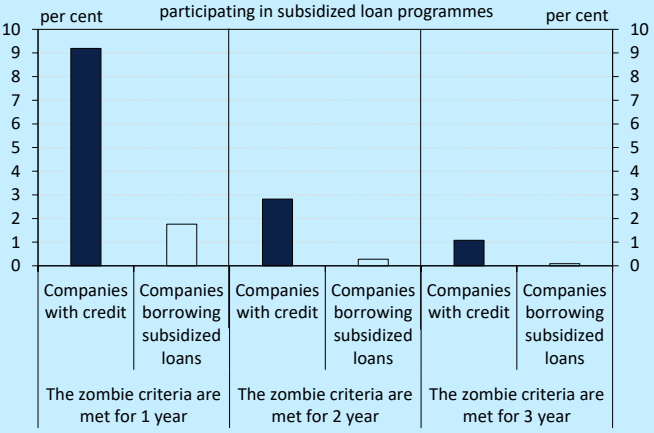
We identified zombie companies operating in Hungary on the basis of profitability, indebtedness and activity aspects. Zombie companies are fundamentally identified in the literature on the basis of their financial and operating features: most often those companies are classified here that have been operating for years, but are inactive (do not implement investment), whose earning power is low and have debt servicing problems and rely excessively on external support. Accordingly, in our analysis a company was identified as a zombie company in a given year if all the following were true at the same time: (1) the company had a low debt repayment capacity (its EBITDA/loan debt ratio was less than 5 per cent), (2) did not carry out any investment, and (3) its return on assets was negative. In addition, in relation to our main results we determined that the undertaking should comply with the above requirements for at least two years, thus eliminating the start-ups and/or companies that are struggling with temporary profitability problems. Nevertheless, for the purpose of the sensitivity analysis we also present the share of the companies that meet the above criteria for one or three years. Our analysis is based on balance sheet data and profit and loss statement data received from the Central Credit Information System (CCIS) and the National Tax and Customs Administration. Due to the one-off, extreme impact of the coronavirus crisis on undertakings, the information for 2020 was not taken into account during identification. It is important to emphasise that because of the specification of the variables, the analysis only refers to companies that had a loan in the given year. Although their share within the total corporate population is relatively low (17–20 per cent), in view of their number of employees and higher efficiency, the importance of these companies from a whole-economy aspect is high.

[8]De Martiis et al. (2021): Are you a Zombie? A Supervised Learning Method to Classify Unviable Firms and Identify the Determinants. http://dx.doi.org/10.2139/ssrn.3625473

[9]Financial Stability Review, May 2021 - European Central Bank, pp. 92-99: https://www.ecb.europa.eu/pub/pdf/fsr/ecb.fsr202105~757f727fe4.en.pdf

The ratio of zombie companies in Hungary can be considered low, and their survival was not facilitated by the subsidised credit schemes announced after the coronavirus. According to our findings, the ratio of companies qualifying as 'unviable' on the basis of at least two years among the companies that have a loan can be considered insignificant in Hungary. Only 2.8 per cent of the companies met the aforementioned criteria, and these companies accounted for 1.7 per cent of all loans outstanding. In addition, if meeting the criteria is required for one year or three years instead of two years, 9.2 per cent and 1.1 per cent of the companies that have a loan, respectively, can be identified as unviable. Among the companies with recourse to the subsidised credit schemes, the share of the ones identified by us as zombies is relatively lower than within the total population of companies that have a loan. This confirms that the subsidised credit schemes announced after the coronavirus typically did not facilitate the continued operation of zombie companies. Since March 2020, 99 per cent of the subsidised schemes and 97 per cent of new loan disbursements have been related to the viable companies and ones classified as zombies for a maximum of one year.

Share of zombie companies among companies with credit and participating in subsidized loan programmes

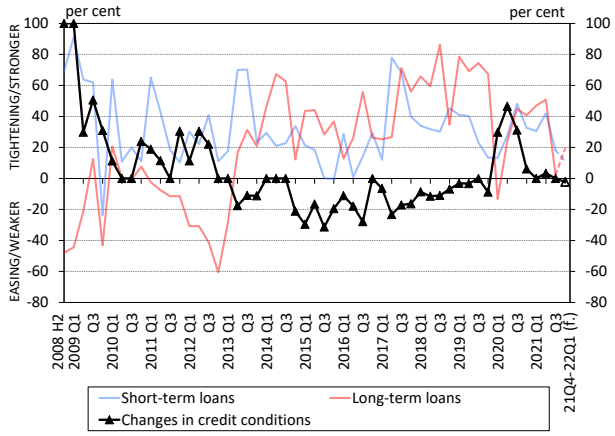


Note: Zombie criteria: EBITDA/debt ratio less than 5 per cent, no investment and negative return on assets. Source: MNB, National Tax and Customs Administration (NTCA).

On the whole, it can be established that the share of zombie companies in Hungary cannot be considered high in an international comparison, and a low number of unviable companies benefited from the subsidised credit schemes introduced as a result of the coronavirus.

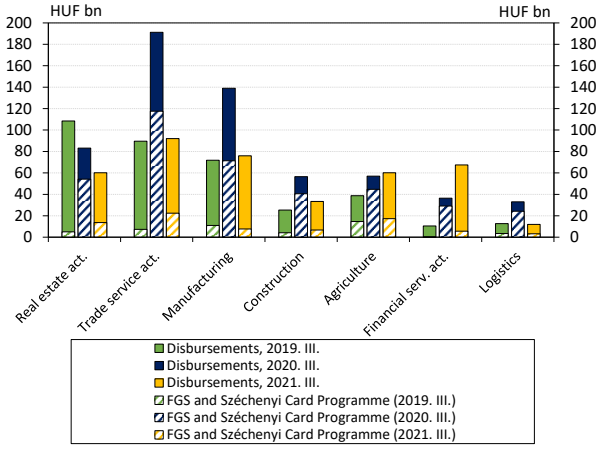
3.2. Corporate loan portfolio not expected to decline even after depletion of the FGS Go! allocation

Chart 25: Changes in credit conditions and credit demand in the corporate segment



Note: Net percentage balance of respondent banks indicating tightening/easing and weaker/stronger demands, weighted by market share.
Source: MNB

Chart 26: New SME loan disbursements by sector

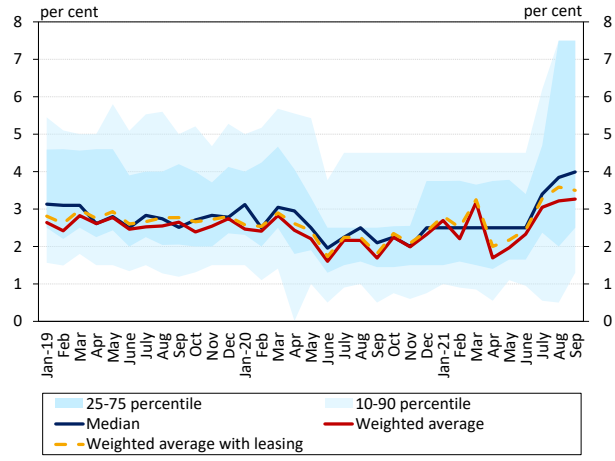


Note: Data does not contain overdraft facilities. Source: MNB

Banks continue to report an upswing in credit demand, with credit standards remaining unchanged. In Q3, credit institutions responding to the Lending Survey reported unchanged credit conditions in all corporate size categories. Looking ahead to 2021 Q4 and 2022 Q1, 2 per cent of the banks are planning to ease their credit conditions for large corporations, and 11 per cent for small and micro-enterprises, whereas in the case of commercial real estate loans 15 per cent are planning to tighten. Although to a lesser extent than in previous quarters, banks experienced strengthening demand for both short-term and long-term loans (Chart 25) as well as increased credit demand in the SME and large corporation segments, and looking ahead they expect stronger demand despite depletion of the FGS Go! allocation. The strengthening in demand is mostly related to forint loans, while demand for FX loans remained practically unchanged in the previous quarters.

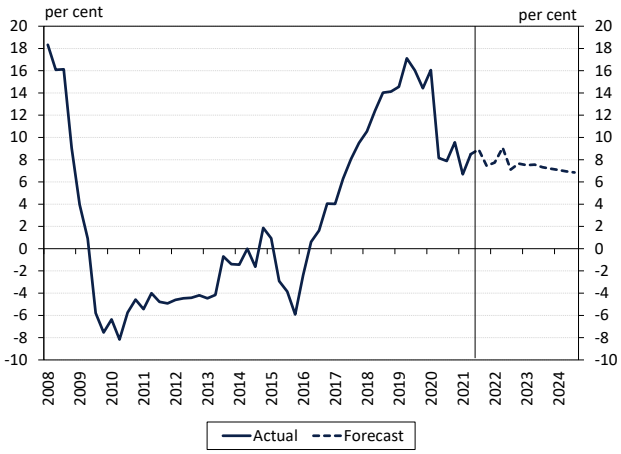
SME loan disbursements decelerated in Q3. In 2021 Q3, the share of market-based loans within new SME disbursements reached 75 per cent in the sectors with the seven largest loan portfolios, while this same ratio amounted to 30 per cent in the same period of the previous year. In relation to upcoming depletion of the FGS Go! envelope, in the sectors under review (Chart 26) the aggregate new disbursement of HUF 401 billion in Q3 falls 33 per cent short of that of the same period of the previous year, but exceeds the volume of the period two years ago, which was less affected by subsidised credit schemes, by 12 per cent. The shares of the Széchenyi Card Programme and the FGS Go! within total disbursement remained below 30 per cent in the larger sectors in Q3, whereas in the same period of the previous year they represented a share of more than 50 per cent in all the sectors. A reason for the lower disbursement was that due to the favourable conditions of the FGS Go! scheme companies may have brought forward their demand in the past quarters, but new SME disbursement may strengthen again in the future with the upturn in the new constructions of the Széchenyi Card Programme and other government schemes.

Chart 27: Interest rate distribution and weighted average interest rate of new HUF-denominated project loans in the SME segment



Note: Investment loan category comprises investment loans, investment purpose credit lines, project loans and credit lines for projects. In the case of the weighted average interest rate calculated with lease, the project loan comprises the lease transaction as well as the lease transaction credit line loan purposes. Source: MNB

Chart 28: Forecast for the annual growth rate of the corporate loan portfolio



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

Corporate lending rates increased as a result of the higher interest rate environment and an increase in the share of market-based loans within new disbursements. During Q3, the average interest rate level – excluding money market transactions – on forint loans below one million euros with variable rate or with up to one year initial rate fixation increased by 38 basis points to 3.4 per cent. The median interest rate on SME forint working capital loans[10] has not changed since the interest rate hike cycle that started in June, whereas the median interest rate on project loans[11] increased by 149 basis points (Chart 27). Since the start of the interest rate hike cycle, the contract amount weighted average interest rate on SME working capital and project loans rose by 133 and 94 basis points to 3.1 and 3.3 per cent, respectively, as of end-September; within that, market-based loans increased by 70 and 110 basis points. In addition to the tighter interest rate environment, there is also a composition effect behind the rise in interest rates, as a strong increase was observed in the share of market-based loans within new disbursements after the depletion of FGS Go!.[12]

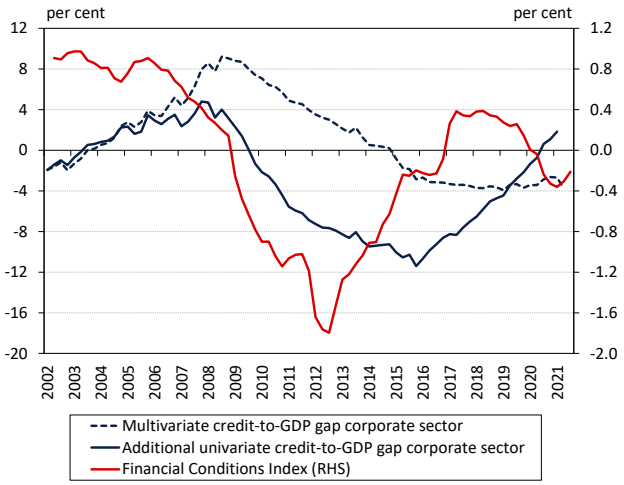
The expansion in corporate loans is expected to decelerate slightly. According to our forecast for corporate lending, corporate loan growth is expected to slow slightly, in parallel with the phasing out of the FGS Go! and the strengthening of the fourth wave of the pandemic. As we expect, extension of the moratorium in a narrowed form will only slightly increase future loans outstanding by restraining repayments, due to the low ratio of users within the total corporate loan portfolio. Supported by favourable possibilities to obtain funds since the beginning of the coronavirus, investment reached its pre-crisis (2019 Q4) level in Q2, but in the future the growth rate of private investment may be lower than what was typical prior to the crisis. In parallel with nominal GDP growth, annual expansion in the corporate loan portfolio may again rise to around 8 per cent from the beginning of 2022 (Chart 28).

[10] Working capital loans: working capital loans, credit lines, factoring transaction and loans materialising with a factoring transaction credit line loan purpose.

[11] Project loans: investment loans, credit lines with investment purpose, project loans and loans materialising with a project-purpose credit line loan purpose.

[12] Another reason for the increase in interest rates is that in our calculations we used the interest rates complemented with the state interest rate subsidy: in the case of the FGS, the share of which within disbursements is declining, there is no difference between the transaction interest rate and the customer interest rate, but in the case of the Széchenyi Card Programme, the importance of which is growing within the subsidised schemes, the transaction interest rate appearing in our statistics is higher than the interest rate to be paid by the customer.

Chart 29: 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. For the methodology, see: Kocsis – Sallay (2018): Credit-to-GDP gap calculation using multivariate HP filter. MNB Occasional Paper 136. At each point in time, the FCI value is the divergence from the historical average measured in the standard deviation of the FCI. Source: 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

The cyclical position of banking sector lending can be considered close to equilibrium. The additional univariate credit gap was in slightly positive territory, while the multivariate credit gap was in slightly negative territory in the corporate sector, and thus the cyclical position of corporate lending is close to equilibrium, while the credit-to-GDP ratio is around its long-term trend (Chart 29). In 2021 Q1, the level of the corporate loan portfolio as a percentage of GDP corresponded to 22 per cent, but over the longer term it may increase considerably in parallel with regional financial deepening. The Financial Conditions Index rose slightly in 2021 Q3; in spite of the uncertain environment, the Hungarian banking sector continues to be only moderately contractionary and risk-averse. Overall, there have been no signs of recovery without lending in the past year, and corporate lending has not deepened the economic downturn as it did after the global financial crisis. Box 4 also provides a new approach to examining this issue.

BOX 4: ANALYSIS OF THE RELATIONSHIP BETWEEN CORPORATE LENDING AND THE REAL ECONOMY WITH THE HELP OF WAVELET TRANSFORMATION

Various tools are available to measure the interrelationship between the real economy and lending, but the majority of methods do not take into account that the relations under review may be different depending on when exactly and how permanently the variables affect one another. The wavelet transformation allows the decomposition of a time series into cycles (and trends) of different lengths while the properties of the cycles change over time as well. This process provides additional information compared to both the time series and frequency filtering methods: the former are able to decompose time series only along the time dimension, i.e. in a time-varying manner, without distinguishing the cycles of different frequencies, whereas the latter are only able to decompose into cycles of various lengths, i.e. different frequencies, in a constant-over-time manner.

As a result, the relationship between the corporate loan portfolio and both investment and exports can also be examined using a new type of tool, which explores the interactions of the time series under review decomposed in the time and frequency space. Setting out from the wavelet filter, the relations between time series can be analysed with the help of two indicators, the so-called coherence and the phase difference. Wavelet coherence is an indicator similar to correlation, and calculates how strong the relationship between two variables is at various moments and frequencies. The more significant, the higher the value of coherence is, irrespective of the direction of the relationship (negative or positive). In addition, partial wavelet coherence provides more by eliminating (similarly to partial correlation) the effect of other endogenous variables from the relationship of the two variables intended to be analysed. Compared to the above, wavelet phase difference provides further information: similarly to correlation, we learn

whether the relationship is positive or negative at the given moment and frequency and also what 'lead–lag' relationship can be observed between the cycles of the two time series under discussion. The latter expresses which variable follows and with what delay the other variable's cycle of the same length at a given point in time and cycle length. It can also be learnt about the delay relationship how big is the lag with which one variable follows the other one. Secondly, the delay relationship may also change over time, and thirdly, the relationship is examined decomposed into cycles, i.e. 'lead–lag' relationships that are different for each cycle length may also be explored between the two variables.[13]

In the following, short-term and long-term corporate lending are examined separately, as various loan portfolios may have a material impact at various cycle lengths depending on maturity. We analysed the relationships between short-term loans and exports as well as between long-term loans and investment with the help of partial wavelet coherence and phase difference; we controlled in both cases, and excluded the effects of the euro exchange rate, the base rate and the price change, the latter using an appropriate deflator (exports or investment). Starting from 1995, the data of the time series concerned were available at a quarterly frequency; we examined seasonally adjusted year-on-year changes, and our time series were complemented with the forecasts of the MNB's Inflation Report as well, to have as many observations available as possible. According to cycle lengths, the frequencies under review were decomposed into three intervals: short cycles between 1.5–4 years; medium cycles between 4 and 9 years, corresponding to business cycles; and long cycles between 9–16 years, similar to the length of financial cycles. Differences shorter than one and a half years were considered seasonality or noise, while due to the length of our time series we could not examine cycles longer than 16 years.

Periods of significant wavelet cohorencies by cycle lengths and lead-lag relationships

	Cycle length		
	1.5-4 years	**4-9 years**	**9-16 years**
Investment → Credit	2001Q3-2004Q3	2000Q4-2012Q4	2002Q1-2015Q1
Credit → Investment	2009Q2-2013Q4	None	None
Export → Credit	2002Q2-2005Q1	2005Q1-2010Q4	None
	2009Q1-2010Q4 (-)		
Credit → Export	None	None	None

Note: The table contains periods of significant wavelet coherencies at 10 percent significance level. The direction of the arrow in the first column shows the lead-lag relationship between the variables. If the relationships between the two cycyles was negative, this was indicated in a parenthesis. Source: MNB.

Relying on economic correlations, we expected a positive relation between loans outstanding and the cycles of GDP components, as companies typically realise higher economic activity by having recourse to various funds from banks, and therefore, a real economy cycle may naturally be followed by a credit cycle. **Nevertheless, from a financial stability point of view, the situation worthy of attention is when the relationship between cycles is positive, but lending drives the business cycle. This phenomenon calls attention to serious risks, since in this case we either see growth driven by excessive credit outflow or, quite to the contrary, insufficient credit supply restraining economic expansion.**

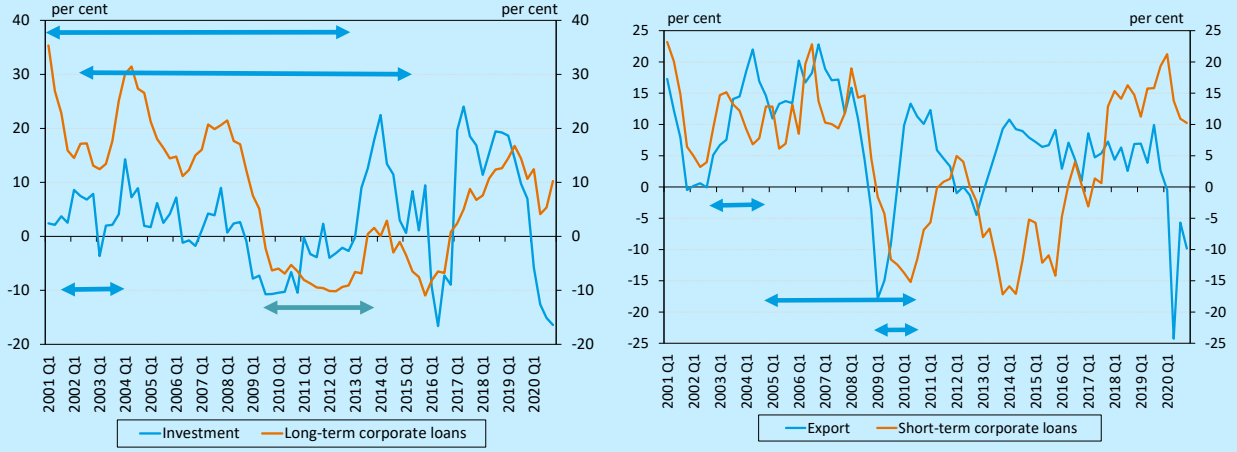
In the case of investment and long-term loans outstanding, a positive relationship was observed at all cycle lengths starting from the early 2000s. The cycle of investment preceded the credit cycles, i.e. the developments in lending adjusted to economic activity. In the case of the longest cycles, this co-movement lasted until early 2015. **Nevertheless, there is also a period observed when loans outstanding took the leading role as opposed to investment activity in the case of short cycles right after the outbreak of the 2008 financial crisis, from 2009 to 2013.** At that time, loans outstanding declined significantly almost over the entire period, i.e. lending presumably deepened the recession via a narrowing of credit supply (**cf. credit crunch**). In its previous Financial Stability Reports, the MNB repeatedly called attention to the negative effects of this phenomenon. The drastic credit crunch and the restraining of the real economy by the credit cycle was resolved in parallel with the interest rate cuts and the launch of the FGS.

[13] For a detailed presentation of the wavelet methodology, see for example: Ramsey and Lampart (1998), Schleicher (2002), Crowley (2005), Aguiar-Conraria and Soares (2011)

In the case of exports and short-term loans outstanding, there was a significant relationship only between the short and medium cycles, and they also existed only for a shorter time than in the case of investment, which is a consequence of the different maturities of the analysed loans outstanding. At the same time, it is a similarity that export-driven positive relations were identified starting from the early 2000s in this case as well. Although lending does not play a leading role in the case of exports in any period, **in 2009–2010, a negative relationship between the short cycles was detected by the wavelet analysis, and according to the time series, exports expanded in these two years in spite of a decline in lending activity (cf. creditless recovery).**

This phenomenon is also one of the consequences of the 2008 crisis: due to tight domestic credit supply, exporting companies were compelled to satisfy their financing needs from other sources (bank loans from abroad, loans granted by parent companies), and as this was – at least partly – successful, exports were able to grow even without a credit expansion (accordingly, in this case one cannot speak of a cause-and-effect relationship).

Growth rate of GDP-components and loan amounts under review (change compared to same period in previous year)



Note: Data are seasonally adjusted, and also exchange rate adjusted in case of loan amounts. Periods with significant wavelet coherencies were indicated by arrows. If a GDP component leads, the arrow is blue, otherwise the arrow is orange. Source: MNB

The analysis carries an important message in relation to the Covid-19 crisis as well: neither the signs of a drastic credit crunch nor those of a creditless recovery were seen in 2020. Accordingly, corporate lending did not result in a further deepening of the downturn; negative credit market consequences similar to those following the 2008 crisis cannot be observed. Firstly, an underlying reason may be that the downturn in 2020 was not a result of a financial crisis, and secondly, lending was facilitated by government loan and guarantee schemes as well.

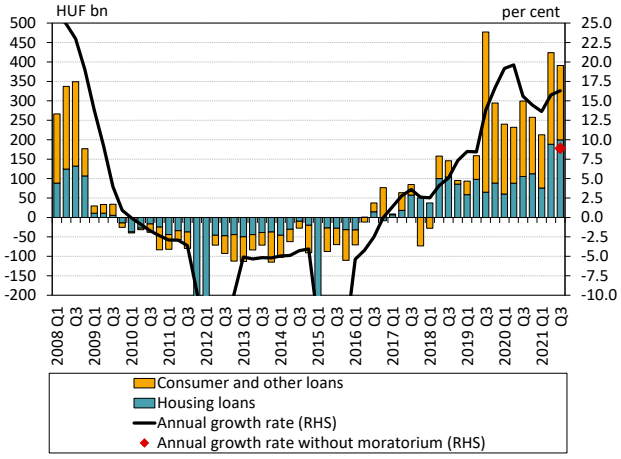
4. Trends in household lending: dynamic credit expansion with moderate risks

The general payment moratorium available until the end of October and state programmes continued to contribute significantly to the expansion in household loans. Housing loan disbursement rose to a previously unseen level as a result of the home subsidies, the pick-up in the housing market and demand brought forward in relation to the interest rate hike cycle. Double-digit loan growth may also continue in the coming years with the persistence of subsidies and strong demand, and via the FGS Green Home Programme available from the autumn. Despite of the credit expansion, which is outstanding in an international comparison, there is still room to increase credit penetration in a sound structure. Excessive indebtedness is not seen in new household loan disbursements, but it is important to more thoroughly examine those debtors who borrowed under the Home Purchase Subsidy Scheme for Families, or took out personal loans or prenatal baby support loans, in addition to their market-based housing loans.

As a result of the strong competition among banks, the increase in the cost of funds observed since the beginning of the year has only fed through into lending rates on newly disbursed loans to a small degree. In addition, the impact of the higher interest rate environment on households' solvency is softened by the continuous amortisation of the variable-rate loans outstanding and by new loan disbursements under the debt cap rules, which encourage the extension of loans with longer interest rate periods. In the case of variable-rate loans, the credit risk may be reduced by refinancing using fixed-rate loans, but its utilisation is low, in spite of the still favourable interest rate level of housing loans. The income situation of some debtors has deteriorated in recent years, which deserves special attention due to the increase in instalments.

4.1. Household loans at a peak, supported by home subsidy measures

Chart 30: Household loan transactions of credit institutions



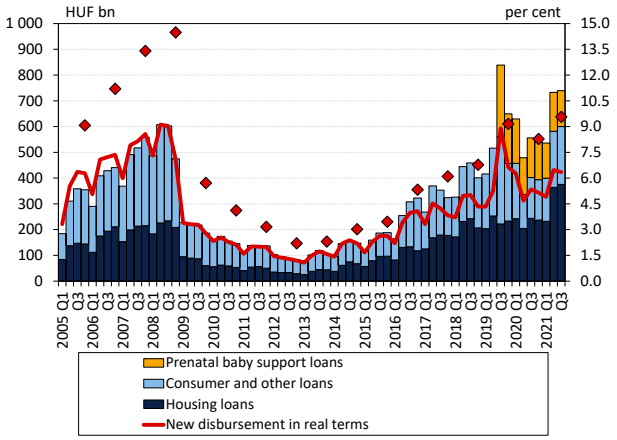
Note: Consumer and other loans refer to home equity loans, personal loans, prenatal baby support loans, hire purchase, vehicle loans and other loans. Source: MNB

Some one third of the total household loan portfolio was still in moratorium in 2021 Q3, making a major contribution to the expansion in loans outstanding. In 2021 Q2, household loans outstanding in the entire financial intermediary system expanded by HUF 421 billion as a result of transactions, and thus the annual growth rate amounted to 15.3 per cent. In the third quarter, the credit institution's[14] loan portfolio expanded further, resulting in an annual growth rate of 16.3 per cent (Chart 30). Major contributors to the increase were the new home purchase subsidy measures available from 2021,[15] which resulted in a historical high in housing loan transactions both in Q2 and Q3. The dynamics of lending, which is outstanding in an international comparison, is attributable partly to the effect of the payment moratorium that restrains instalments. According to our estimation, excluding this effect would have resulted in a growth rate of approximately 9 per cent in the credit institution segment.

[14] We do not have Q3 data for the entire financial intermediary system.

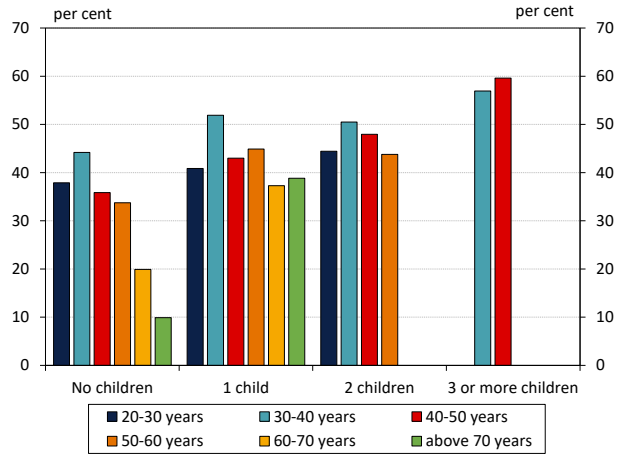
[15] Reduction of VAT to 5 per cent for new homes, VAT exemption of new properties purchased using the Home Purchase Subsidy Scheme for Families (HPS), exemption from duty for homes purchased using the HPS, multigenerational HPS, home renovation subsidy, subsidised housing loan for home renovation.

Chart 31: New household loans in the credit institution sector



Note: Without FGS loans and early repayment scheme. The disbursement / income figure shows the sum of the annual nominal loan disbursement as a ratio of the household sector's total annual disposable income. For the calculation of real new loan disbursements, we used MNB's housing price index in the case of housing loans and consumer price index in the case other loans (2008 = 100%). Source: HCSO, MNB

Chart 32: Household loan penetration by the average age of minors and earners living in the household



Source: HFCS 2020

New housing loan disbursement reached a historical high with the contribution of state subsidies. The sudden stop observed in new household loan disbursements in 2020 proved to be temporary. Between October 2020 and September 2021 the value of new loan disbursements reached more than HUF 2,500 billion, which is 10 per cent higher than the volume from the previous year. Accounting for almost one third of the total disbursement, state-subsidised programmes (HPS, prenatal baby support loan, home renovation loan) also play a major role in the dynamic increase in lending. Both 2021 Q2 and Q3 were outstanding in terms of lending for housing, and disbursements in Q3 exceeded the figures for the same periods of 2020 and 2019 by 54 per cent and 69 per cent, respectively. Within new housing loans, the share of those borrowed for renovation purposes increased as a result of the preferential loans that may be applied for, in addition to the home renovation subsidy; banks concluded contracts for this loan in an amount of HUF 39 billion by September.[16] The disbursement of personal loans is still below the pre-pandemic level. Although since the introduction of the prenatal baby support loans new contracts concluded by households have reached levels seen before the 2008 crisis, in real terms and as a percentage of households' disposable income they fall short of the year 2008 level (Chart 31).

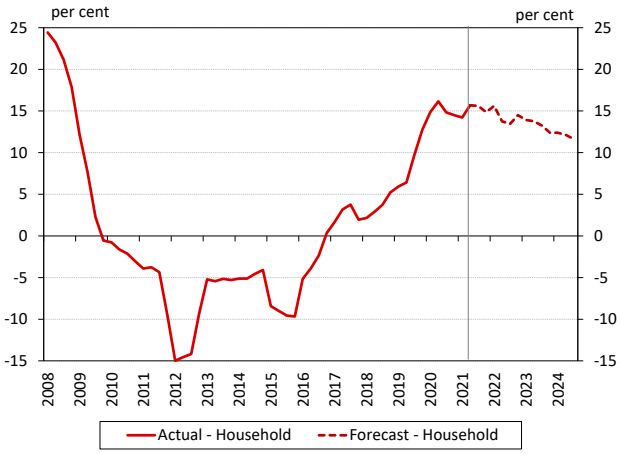
A further rise in credit penetration in itself would not pose a financial stability risk. The household loan-to-GDP ratio, which captures financial depth, was at 17 per cent in 2021 Q2. Of the EU Member States, the ratio of borrowers is lower only in Romania and Latvia than in Hungary, which is lagging significantly behind the euro area Member States (52 per cent) and the average of the Visegrád countries (35 per cent) as well. According to the data for Hungary of the ECB's 2020 international survey,[17] only 30 per cent of households have some kind of loan product, and this ratio did not increase between 2014 and 2020. Credit penetration is higher than the average among those with higher levels of education and among people aged 30–50 years, as well as in households where several earners and several children live (Chart 32). The relatively low presence of households in the credit market can also be explained with the mistrust related to the banking sector: the findings of the MNB's September 2021 household survey confirmed again that around one

[16] The sum of the requests for home purchase subsidies – financed not only with loans – received by the State Treasury amounted to HUF 78 billion before 1 October, of which HUF 54 billion in state subsidies was disbursed.

[17] Household Financial and Consumption Survey

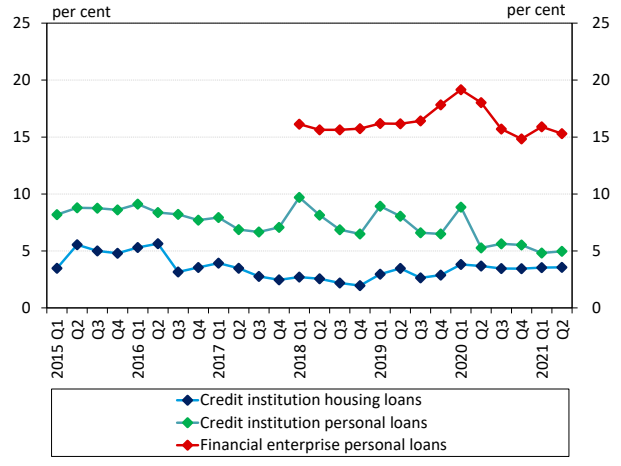
quarter of the total population still do not trust domestic banks. Nevertheless, the popularity of state-subsidised products may contribute to a rise in credit penetration: according to the MNB survey, the HPS, the home renovation subsidy and the prenatal baby support loan are known by almost the entire population, which may attract households to banks. One third of the debtors and co-debtors who currently have a prenatal baby support loan or HPS-related loan did not borrow until 2012.

Chart 33: Household lending forecast



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

Chart 34: Share of contracts with income below the median and with PTI above 40 per cent in new disbursements

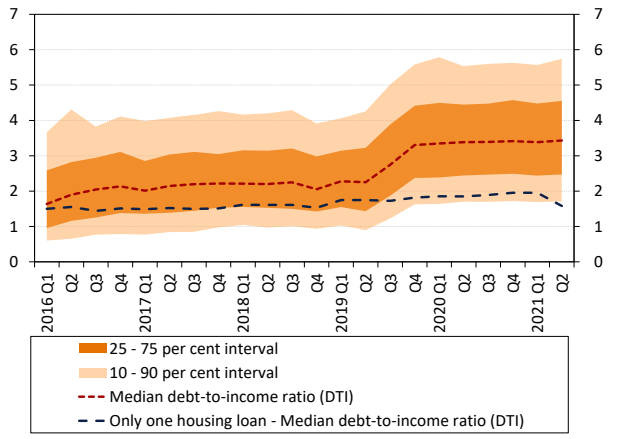


Source: MNB

The double-digit expansion in household loans outstanding may continue in the coming years as well. In 2021 Q2, household loans outstanding in the entire financial intermediary system expanded by 15.3 per cent year on year, supported significantly by the buoyant demand for the new home purchase subsidies as well as by the technical effect of the payment moratorium. With the expansion of the economy and nominal wage bill and via the central bank's FGS Green Home Programme (and the related interest-free HPS), loan growth may remain in the double-digit range until end-2022 (Chart 33). Households' credit demand is expected to decline with the phasing out of the prenatal baby support loan at end-2022 and due to the rise in lending rates as a result of the increasingly tight monetary policy.

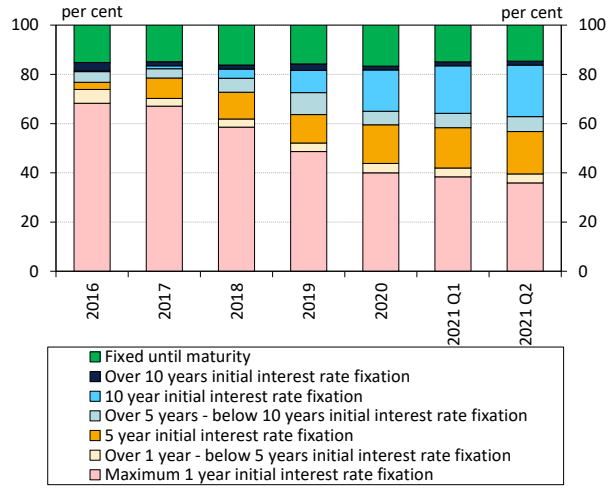
Excessive indebtedness is not seen in households' borrowing from banks. In the case of housing loan contracts concluded in 2021 Q2, a mere 4 per cent of debtors have an income below the median and a – relatively risky – more than 40 per cent payment-to-income ratio (PTI). This ratio is also low (around 5 per cent) in the case of personal loans (Chart 34). The ratio of debtors who can be considered excessively indebted is higher at financial enterprises, where 15 per cent of the personal loan contracts were concluded by customers who typically have lower income and higher PTI ratios. Although more than 60 per cent of financial enterprises' debtors have below-median income, the amounts of loans borrowed from these institutions are typically low, not exceeding HUF 1 million.

Chart 35: Debt-to-income ratio of customers taking out a housing loan at the time of borrowing, taking into account other loans



Note: Based on the amount of the total housing loans taken out by one debtor on the same day, plus the amount of prenatal baby support loans and personal loans taken out a maximum of 180 days before the housing loan. Source: MNB

Chart 36: Distribution of mortgage loans outstanding based on initial interest rate fixation period



Source: MNB

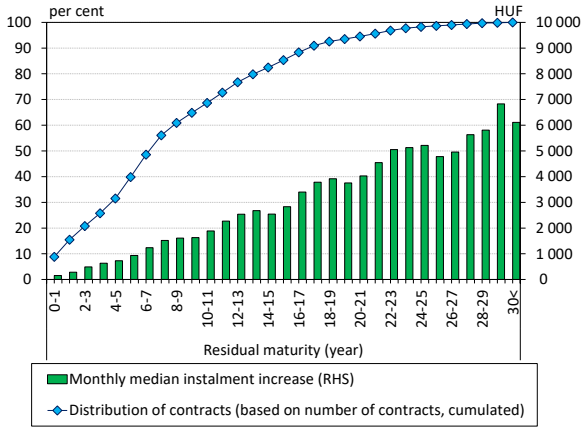
The debt-to-income ratio of those who complement their housing loans with other loans increased in the past years. Of housing loan debtors, 53,600 customers (14.4 per cent of those debtors who took out at least one housing loan since 2015) borrowed at least one other market-based or subsidised loan, taking housing and personal loans as well as prenatal baby support loans into account in the hoarding of credit. Among these customers, the median debt-to-income ratio[18] recorded upon borrowing rose from 1.6 in early 2016 to 2 in one year following the introduction of the HPS. With the launch of prenatal baby support loans in July 2019, the indicator increased to 3.3, while the debt of the most indebted one tenth of customers is nearly six times higher than their annual income (Chart 35). The increased indebtedness justifies the monitoring of loan debtors who complement their respective housing loans with other loans as well.

4.2. Interest rate risk of loans outstanding is more and more limited

The interest rate risk of mortgage loans outstanding is gradually declining. Central bank base rate hikes pass through into interbank rates, which increase the interest rates on variable-rate loans as well. In addition, if long-term liabilities become more expensive, it may raise the reference rate of loans with longer initial interest rate fixation at the end of their respective repricing periods. At the same time, the ratio of mortgage loans outstanding with a maximum 1 year initial interest rate fixation period, which are most exposed to interest rate risk is steadily declining, amounting to 36 per cent within the total mortgage loan portfolio in June 2021 (Chart 36). To a large extent, this is attributable to the introduction of the 'Certified Consumer-friendly Housing Loan' product qualification and the debt cap rules differentiated according to interest rate fixation period, as a result of which the share of loans with up to one year initial interest rate fixation period within newly disbursed housing loans has now declined to below 1 per cent. At the same time, in addition to variable-rate loans, the start of the next interest rate period of some of the loans with longer initial interest rate fixation periods also falls in the next year: on the whole, 40 per cent of all mortgage loans outstanding, i.e. around 466,000 contracts may go through repricing within one year after June 2021. The share of loans affected by repricing is even higher (some 51 per cent)

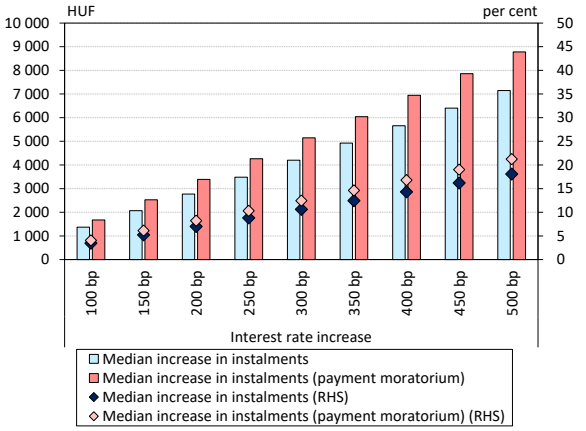
[18] Debt-to-income ratio: the total contractual amount of loans as a percentage of the customer's annual income.

Chart 37: Distribution of mortgage loans outstanding repriced within one year by residual maturity and the increase in monthly instalments in the case of a per unit interest rate hike



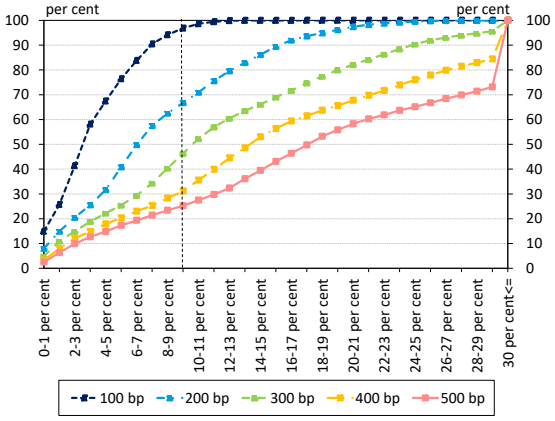
Note: In the case of a 100-basis point rise in the annualised interest rate on loans outstanding. Source: MNB

Chart 38: Rise in instalments of mortgage loans repriced within one year according to interest increase scenarios



Note: In the case of a given, hypothetical rise in the annualised interest rates on loans outstanding. Source: MNB

Chart 39: Distribution of mortgage loans outstanding repriced within one year according to the increase in repayment instalments



Note: Cumulative distribution based on the number of contracts. Source: MNB

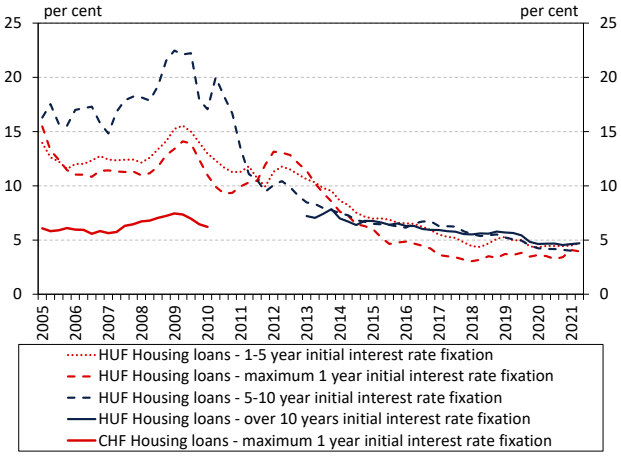
within the mortgage loans outstanding that are in payment moratorium still at the end of Q2.

The median growth in instalment of mortgage loans repriced within one year is below HUF 1,500 in the case of a unit rise in the interest rate. The rise in repayment instalments of loans during an interest rate hike is significantly affected by their respective residual maturities (Chart 37). At the same time, in view of the continuous amortisation, at present the structure of maturity in the case of mortgage loans repricing within one year is much more favourable than before: in June 2021, the median residual maturity of the portfolio was 7.5 years, whereas that of the variable-rate loans outstanding amounted to 12.1 years prior to the FX conversion in 2015. In the case of mortgage loans repriced within one year, the typical (median) increase in instalment would amount to HUF 1,370 and HUF 7,150 for interest rate increases of 100 basis points and 500 basis points, respectively (Chart 38). In the case of those in moratorium, the increase would be somewhat higher, i.e. HUF 1,670 and HUF 8,780, respectively, partly due to the longer, typically 9-year residual maturity. Repayment risks are reduced by the fact that customers with housing loans typically come from upper income categories, and thus they may be considered more resistant from an income point of view.

The indebtedness relating to contracts affected by major increases in instalments is also limited. Examining the mortgage loan portfolio repriced within a year, half of the contracts concerned are affected by a maximum 3-per cent increase in instalment in the case of a 100-basis point interest rate hike and by a maximum 7-per cent increase in instalment for a 200-basis point interest rate hike (Chart 39). In the case of a 100-basis point interest rate hike, a mere 3 per cent of the contracts repriced within one year would face a major increase in instalment exceeding 10 per cent, whereas one third of them would do so in the case of a 200-basis point and three quarters of them in the case of a 500-basis point rise in the interest rate. Repayment risks are limited in this latter case as well by the fact that the contracts concerned and disbursed after 2015 were disbursed with a typically low, 27-per cent payment-to-income ratio and a loan-to-value ratio of 56 per cent.

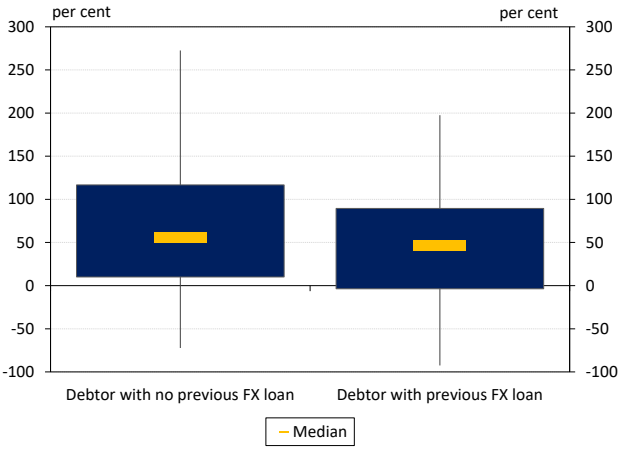
The refinancing of loans that have a short interest rate period may serve as protection against interest rate risk. Although the rise in long-term yields since the beginning of the year has not yet completely passed through into bank APRs (Box 5), in the case of variable-rate loans the

Chart 40: APR of newly disbursed housing loans



Source: MNB

Chart 41: Income evolution of loan debtors between 2015 and 2019



Note: Whiskers denote the 10th and 90th percentiles, the boxes the interquartile range. Except those debtors, who were born before 1956 and thus could have moved to pensioner status. When 2015 ONYF income data were missing, 2014 or 2016 ONYF income data were used. When 2019 ONYF income data were missing, 2019 or 2020 NAV income data were used. Source: MNB, ONYF, NAV

effect of the interest rate hike cycle may rapidly appear in the repayment burdens. Interest rate fixation for a longer time may be a significant help against the materialisation of interest rate risk for debtors repaying variable-rate loans, a number of whom had borrowed FX-based loans before. The current low interest rate environment may be expressly suitable for that: the interest rate level of new fixed-rate housing loans is even more favourable than the pricing of Swiss franc-based loans was before 2008 (Chart 40). However, the refinancing of variable-rate loans with fixed-rate products is still low. In spite of the recommendation[19] issued by the MNB in April 2019 and banks' information letters, up to June 2021 a mere 6.5 per cent of the eligible contracts were refinanced with products with interest rates fixed for a longer period. Aversion to the interest rate risk is observed in the attitude of households: according to the MNB's February 2019 Interest Rate Risk Survey, a fixed rate is clearly the most important aspect for the whole population when choosing a loan product. At the same time, depending on the wording, in the case of concrete offers 54–72 per cent of the total population did not recognise the loan products with interest rate fixation.

Compared to income, debt service of the household sector is low, but some debtors have experienced a worsening income position in recent years. The ratio of the debt service burden of loan debtors to the household sector's total disposable income has shown a declining trend in past years and amounted to a mere 5 per cent in the second quarter of 2021. This is partly attributable to the favourable income tendencies experienced in the preceding period: between 2014 December and 2020 December, median income rose by 56 per cent in the case of those debtors, who have had no previous FX loans and by 47 per cent in the case of those with previous FX loans (Chart 41). Despite these favourable trends, some debtors experienced a decrease in their income during this period: 22 per cent of debtors with no previous FX loans and 26 per cent of debtors with previous FX loans suffered an income decline in this period. The debtors falling in the decile with the largest drop in income experienced a decrease of more than 70 per cent and 90 per cent in the two groups, respectively.

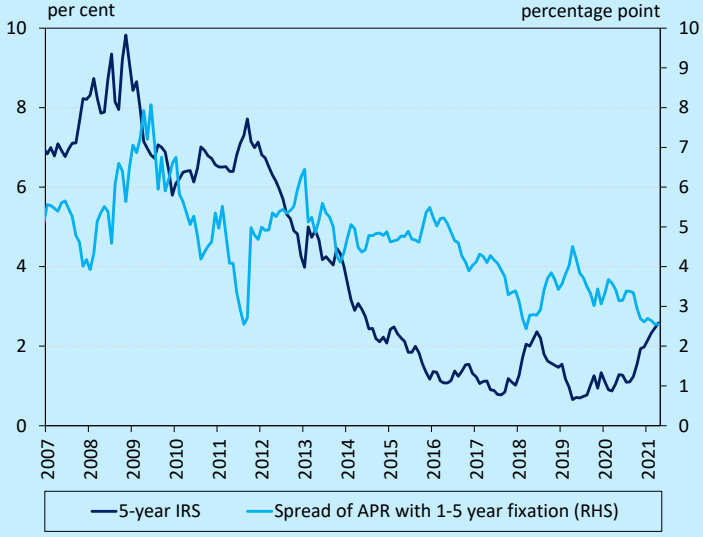
[19] Recommendation No. 9/2019 of the Magyar Nemzeti Bank on the interest rate risk of the variable-rate mortgage loans and on fostering the provision of information on the management thereof (https://www.mnb.hu/letoltes/9-2019-kamatkockazat.pdf)

Box 5: Time series analysis of the repricing practice of newly disbursed housing loans

An inverse relationship is observed over the short run between changes in the yields of the Budapest Interest Rate Swaps (BIRS) and interest rate spreads on housing loans with long-term interest rate fixation. In its reports, the MNB calculates the spread on housing loans as the difference between the average APR-based credit cost and the average reference rate corresponding to the interest rate fixation period of the given type of loan. Therefore, if banks reprice the housing loans after a change in the costs of funds only with a delay, there may be an inverse relationship between the changes in the cost of funds and the interest rate spread in the given month, at least over the short run. This relationship causes bias mainly in the case when reference rates follow a trend, and change in one direction for several months, or when lending almost exclusively consists of loans with longer-term interest rate fixation.[20]

Changes in the reference rate are estimated to pass through into the interest rates of variable rate loans and into the interest rate conditions of fixed-rate loans over the course of three and four months, respectively. In addition to housing loans with interest rate fixation periods of at least one but up to five years (hereinafter: fixed-rate loans), variable-rate loans or ones with an up to one-year interest rate period (hereinafter: variable-rate loans) were also included in the econometric modelling of the transmission between the costs of funds and newly disbursed housing loan interest rates. In the former case, the estimation period was January 2007 to August 2021, while in the case of the latter, in order to reduce the biases of the composition effect, it was January 2003 to December 2017, as subsequently the disbursement of variable-rate housing loans declined considerably.

5 year IRS and spread of APR with 1-5 year fixation



Source: MNB

In the case of newly disbursed variable-rate housing loans, the interest rate serving as a dependent variable was explained by past changes in the three-month BUBOR and in the dependent variable.[21] Based on the impulse response functions of the model, following a shock taking place in the level of the BUBOR, the APR is expected to increase or decrease to the same degree in three months. In addition, we found that there is a significant long-term equilibrium relationship between the variables:13 per cent of the deviation from that is expected to be corrected in a month, and on the whole, 1.18 times the change in the BUBOR is expected to feed through into the APR.

The interest rate on fixed-rate housing loans was explained with the past changes in the five-year BIRS and in the dependent variable.[22] According to the model, the changes observed in the five-year BIRS in the previous four months have explanatory power in the change in the APR in the given month. Based on our findings, following one unit of shock occurring in the level of the five-year BIRS, the APR is expected to rise or decline to a degree corresponding to the shock in four months. In the case of fixed-rate loans, we have not found any statistically significant long-term equilibrium

[20] In the case of variable-rate housing loans with up to one year initial interest rate fixation, according to banks' lists of conditions, the interest rate on new loans typically depends on the BUBOR valid at the end of the previous month, and the spread – which is also given in the list of conditions – has to be added to it. By contrast, in the case of loans with interest rates fixed for a longer period, typically there are exact interest rate values which are not updated by banks every month.

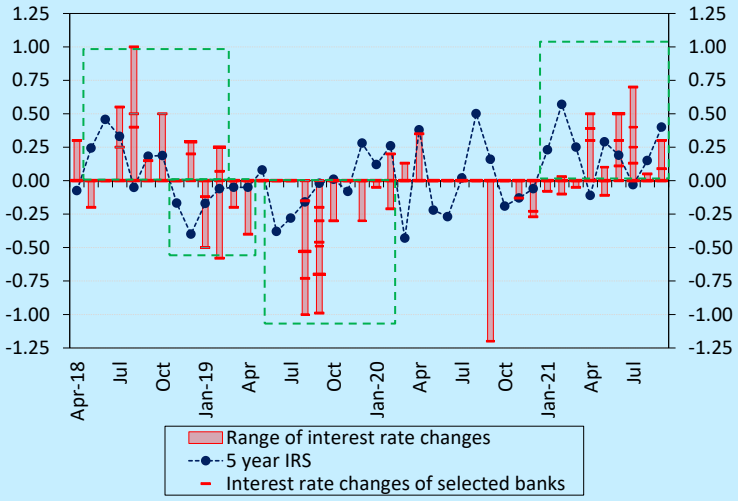
[21] Between the levels of the two time series under review, with an optimal lag number according to the Akaike and the Hannan–Quinn information criteria, the cointegration relationship exists at a 5-per cent significance level; therefore, we applied a vector error correction model (VECM) for the examination of repricing.

[22] Based on the cointegration analysis, in this case even at a 10-per cent significance level no long-term equilibrium relationship was found between the time series, and thus a vector autoregressive (VAR) model was used to examine the interest rate transmission.

relationship. One underlying reason, *inter alia*, could be that long-term changes in the spread may primarily be influenced by other factors, such as competition between banks.

Banks' practices are not uniform in terms of reflecting the changes in the reference rate in the credit conditions; major differences are observed in reaction times and the typical degrees of repricing. We examined banks' repricing practices in the case of fixed-rate housing loans on the basis of the interest rate conditions of the largest domestic banks as well. The advantage of this approach is that – in contrast to the average APR on new disbursements – the interest rates given in bank announcements are not affected by the composition of borrowers. We compared the monthly changes in credit conditions to the monthly changes in the five-year BIRS, and starting from April 2018 we identified four major repricing periods at the beginning of which the reference rate was persistently increasing or decreasing for several months. On the whole, in these periods, banks first changed their conditions most often two or three months after the first month of the persistent rise/decline in the BIRS. The degree of these reactions, which can be considered relatively early, fell typically significantly short of the changes in the reference rate, and thus they were usually followed by a change or two of the same direction. At the same time, pricing practices are not uniform; there were banks whose first substantial reaction came only after the passing of the seventh month in the first identified period characterised by a rising reference rate. Prior to that, they either had not changed their conditions or had done so only once, to a small degree. Compared to other institutions, the banks that showed this wait-and-see attitude changed their conditions only to a lesser degree, thus reacting at the same time to the next period characterised by a persistent decline in the BIRS. It can be concluded, however, that when two repricing periods characterised by persistent declines in the BIRS followed one another, banks that did not react to the earlier one and were characterised by a wait-and-see attitude later reduced the interest rates in the conditions to a greater degree than others.

5-year IRS and interest rates changes of selected banks



Note: The green frames indicate the identified repricing periods. Source: MNB

In the current rising yield environment, which started in January 2021, banks have typically followed a wait-and-see attitude: they have tightened their conditions by 0.5–0.7 percentage point since the beginning of the year, not even reaching the rise in the BIRS seen in the first two months, and accounting for a mere 26–36 per cent of its increase observed since the beginning of the year. The presumable underlying reason is that a possible interest rate hike may entail a drop in market share, and therefore, competition may have evolved among the institutions, which may have been based on the decline in the banking sector's cost-to-asset ratio seen in the past two years as well as on the previous years' profitability.

5. Real estate markets: upswing along subsidies in the housing market, risks in the commercial real estate market

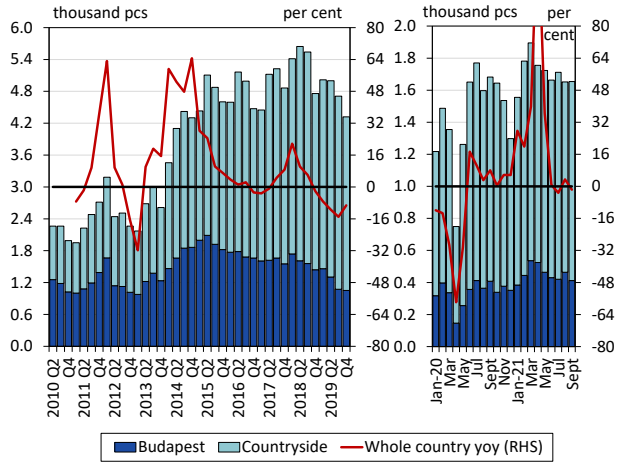
A sharp upturn was observed in the domestic housing market at the beginning of 2021. In February, the number of sales transactions expanded with annual dynamics exceeding 20 per cent, primarily as a result of the demand-increasing effect of new home purchase subsidies launched from 2021. Nevertheless, the number of transactions already stagnated by the summer months in year-on-year terms. In the Budapest housing market, the ratios of both those who purchase with an investment purpose and of foreign buyers have declined since the outbreak of the pandemic. House prices increased considerably in Q1 all over the country, rising by 7.1 per cent in nominal terms on a quarterly basis, which is primarily attributable to the higher price increases observed in settlements outside of the capital. The upswing in the residential real estate market in 2021 H1 was accompanied by strong expansion in the number of housing loan contracts, although price appreciation in the housing market is not driven by an increase in risky lending. Renewed expansion in new supply may be facilitated by the preferential VAT rate for residential properties.

Demand for commercial real estate has been lower since the start of the coronavirus pandemic, mostly affecting the hotel segment. Compared to the average for the period 2018–2019, the average number of guests in domestic hotels declined by 72 per cent in the period from April 2020 to June 2021. Demand in the office market has contracted by 40 per cent on average since the outbreak of the pandemic, leading to a rise in the vacancy rate to 9.8 per cent by June 2021, against the background of a high volume of new office completions. The situation of the industrial-logistics segment is favourable, but high-volume real estate development projects to be launched may exert pressure on rents. In 2021 H1, the volume of newly disbursed commercial real estate project loans expanded by 22 per cent year on year, which was attributable to several one-off items and the increase in the number of contracts concluded prior to the depletion of the allocation of the FGS Go! programme.

5.1. Strong demand and rising house prices are not driven by risky lending

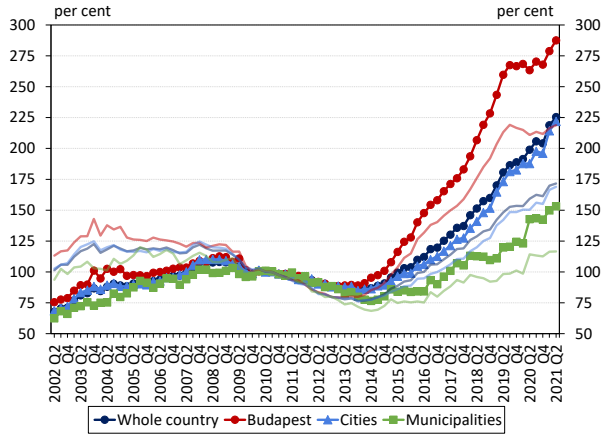
The number of sales and purchases remained high following a significant expansion in the number of transactions in early 2021. Demand for residential properties grew significantly in early 2021, as reflected by the year-on-year expansion of more than 20 per cent in the number of transactions in February. The sudden increase in demand is primarily attributable to the new housing benefits launched from January 2021 (including, *inter alia*, the exemption from duty and the new homes free of VAT when using the Home Purchase Subsidy Scheme for Families, home improvement subsidy). Compared to the start of the year, demand declined by the summer months, but the number of transactions is still around the level seen in the summer of 2020 and above the 2019 level (Chart 42).

Chart 42: Number and annual growth rate of transactions completed by housing agents



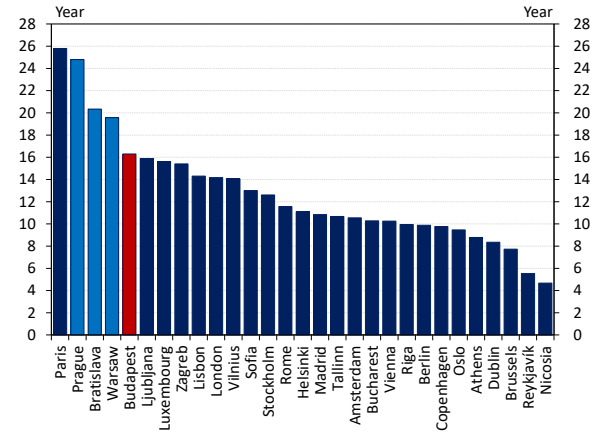
Source: MNB, housing agent database

Chart 43: MNB house price index by type of settlement



Note: The simple lines are real indices, and the marked lines are nominal indices. 2010 = 100%. Source: MNB

Chart 44: Price-to-income ratios in European capitals



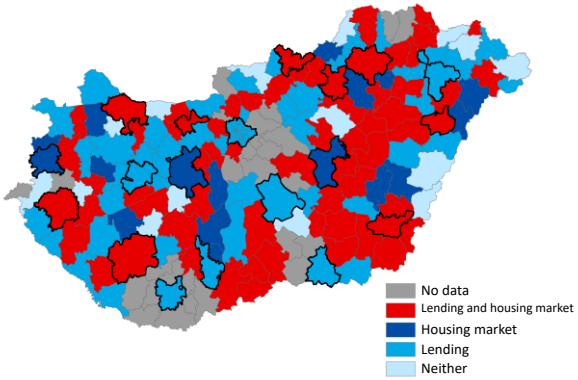
Note: The price-to-income ratio is the ratio of the average capital city house price to the national average wage. Capitals of the Visegrád countries are marked with a different colour. Calculations based on a 75-square meter homes. Source: Eurostat, numbeo.com

House prices rose considerably in 2021 H1, primarily as a result of stronger price rises in rural settlements. According to the MNB house price index, house prices increased significantly, appreciating by 7.1 per cent on national average in 2021 Q1. Both Budapest and rural settlements contributed to the price rise, although it was lower in the capital (4.0 per cent) in Q1. During the same period, house prices increased by 9.3 per cent and 5.2 per cent in rural towns and villages, respectively. In the second quarter, residential real estate prices rose on average by 3.1 per cent nationwide and by 3.2 per cent in Budapest. As a result, the overall annual growth rate of house prices increased to 13.3 per cent in Hungary as a whole and to 9.1 per cent in Budapest in Q2. On a national average, house prices in real terms exceeded their level in the fourth quarter of 2008 by 46.3 per cent by the second quarter of 2021 (Chart 43). Based on preliminary house price indices calculated using data from real estate agents, the annual dynamics of house prices may have accelerated further until 2021 Q3, to 14.7 per cent in Hungary as a whole and may amount to 8.9 per cent in Budapest. There are various factors pointing to a continued rise in house prices. Firstly, households' income and labour market prospects are also favourable as a result of the economic recovery, and secondly, the demand-increasing effect of the home creation programmes remains in place.

In a European comparison, Budapest is one of the least affordable capitals in terms of home purchase. In October, 16.3 years of national average income was needed in the Hungarian capital to purchase a 75-square-meter residential real estate, giving it the fifth worst affordability of home purchase in European capitals, considering national average earnings (Chart 44). In the countries of the European Union, the median value of the examined indicator is 11.3 years. However, in the capitals of the Visegrád countries, housing is more expensive than in Budapest as a proportion of income: to buy a 75-square-meter residential real estate with an average price level, it takes a person with an average income 19.6 years in Warsaw, 20.3 years in Bratislava, and 24.8 years in Prague.

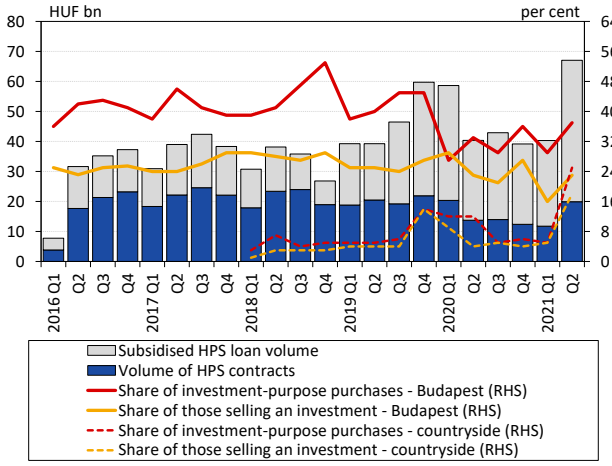
The appreciation of house prices is not driven by an increase in risky lending. An examination of the pick-up in the lending for housing and the price rise in the housing market in 2021 H1 reveals that there was an upswing in lending in more micro-regions than the number of places where residential properties became more expensive. Average square metre prices and the number of newly granted housing loan contracts together typically increased in county seats and districts in the eastern part of the country. At the same time, in Budapest the year-on-year increase in the number

Chart 45: Pick-up in lending for housing and in the housing market by districts in 2021 H1



Note: Upswing in lending for housing: in 2021 Q2, the number of new housing loan contracts expanded by more than 25 per cent year on year. Upturn in the housing market: in 2021 Q1, average square meter prices increased by more than 5 per cent compared to the previous quarter. The districts of county seats and Budapest are framed. No data if fewer than 25 housing transactions were available in 2021 Q1. Source: MNB

Chart 46: Changes in the volume of subsidies and loans under the Home Purchase Subsidy Scheme for Families and in the investment motivation in the housing market



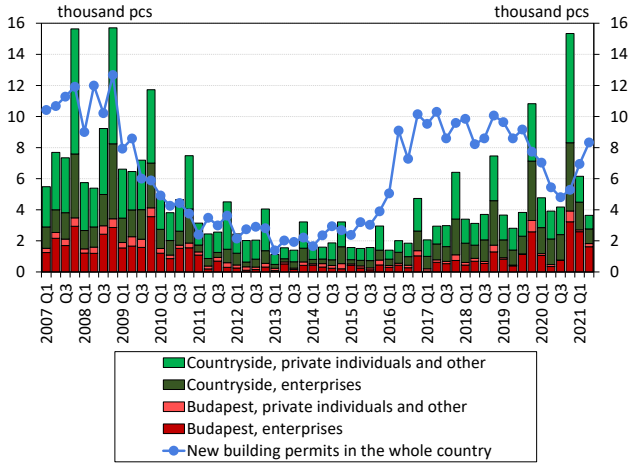
Source: MNB, Ministry of Finance, Duna House

of housing loan contracts exceeding 25 per cent was not coupled with any major rise in average square metre prices (Chart 45). On the whole, at the level of districts no strong correlation is seen between the price increase in the housing market and the expansion in the number of housing loan contracts. In parallel with that, in the past years some 35 per cent of the new housing loans were granted close to the LTV or PTI limits (PTI and LTV values above 40 per cent and 70 per cent, respectively), and only about 5–7 per cent of the disbursements were close to both regulatory limits, which remained almost unchanged even with the significant expansion in lending seen in 2021.

Demand for housing for residential purposes has been more typical of the housing market demand in the capital since the start of the coronavirus pandemic. According to market data, with the appearance of the coronavirus pandemic, the ratio of flats purchased in Budapest for the purpose of investment declined from 45 per cent at end-2019 to 27 per cent in 2020 Q1, and this ratio has remained at a lower level of an average 32 per cent since then. The ratio of foreigners who bought flats in the capital also decreased, from an average 8.6 per cent prior to 2020 to 4.4 per cent by 2021 Q1. In parallel with that, the ratio of those purchasing flats for the purpose of investment declined only to a lesser degree in the countryside with the appearance of the pandemic, while there was no major growth in investment motivation in the housing market outside the capital in the past years. In 2021, more sellers who were selling their earlier investments already appeared in the market. In parallel with that, in 2021 Q2, as a result of the expansion of the home creation subsidies at the beginning of the year, the aggregate volume of loans and subsidies under the Home Purchase Subsidy Scheme for Families increased by 66 per cent year on year (Chart 46). On the whole, for the eligible families, the family support and home creation subsidies introduced in the past years had a significant positive impact on the availability of homes both in the country and in the capital, which also boosted housing market demand (Box 6). Looking ahead, the FGS Green Home Programme introduced by the MNB may drive demand towards energy-efficient new homes, thus stimulating the expansion in supply as well.[23]

[23] For more details, see: MNB Housing Market Report, May 2021, Box 2; MNB Housing Market Report, November 2021, Box 4.

Chart 47: Number of new homes occupied in a breakdown by Budapest and the countryside as well as by owner, and the number of new home building permits issued



Source: HCSO

The number of new home completions already declined in 2021 Q2 year on year. Looking ahead, however, the preferential VAT rate for residential properties may preserve the momentum in home construction. Overall, the number of newly completed homes still increased considerably in 2021 Q1, rising by 28.9 per cent year on year. This increase, however, is attributable to the completion of blocks of flats in Budapest carried over from the end of the previous year. In Q1, the number of homes ordered by entrepreneurs to be built in Budapest increased by 144.6 per cent year on year. In Q1, the number of homes ordered by private individuals to be built already declined, to a greater degree, i.e. by 13.6 per cent year on year, primarily in the countryside, which is also attributable to the higher number of homes completed at end-2020 due to the expected tightening in energy efficiency requirements. In Q2, the number of homes completed was already 6.9 per cent lower compared to the same quarter of 2020, which was attributable to a major decline in home constructions in the countryside. Nevertheless, in view of the reintroduction from the beginning of 2021 of the preferential, 5-per cent VAT rate for residential properties for a limited period (for dwellings with a building permit by the end of 2022), the number of new home building permits issued already started to grow, suggesting an expansion in supply (Chart 47).

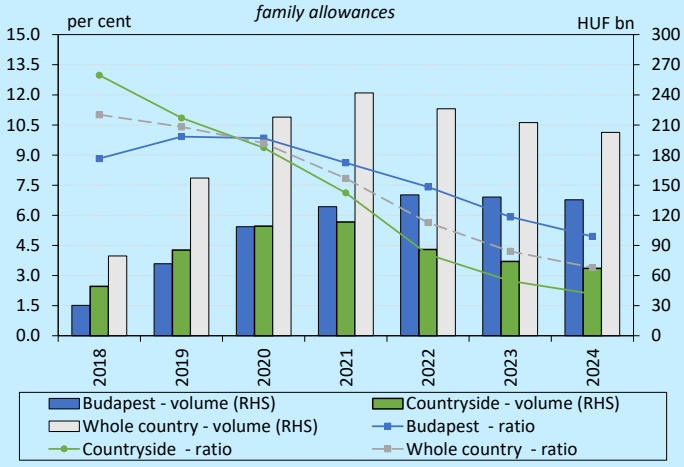
BOX 6: EFFECTS OF FAMILY SUPPORT MEASURES ON THE HOUSING LOAN MARKET ON THE BASIS OF AN AGENT-BASED MODEL

The MNB has developed an agent-based simulation model to assess the complex processes of the housing and credit markets. Developments in the housing and credit markets are organically interconnected and have a number of features (e.g. excessive indebtedness, house price cycles, demographic trends or the heterogeneous physical structure of the housing market) that make the model-level evaluation of these complex processes or even the impact assessment of housing market regulatory measures much more difficult. In response to these challenges, the MNB has developed an agent-based simulation model for the mapping of these complex processes as well as for the monitoring and assessment of the related financial stability risks. The model comprises nearly 4 million households and homes, thus providing a complete mapping of the Hungarian housing market. The individual features of the actors entering interactions in the model were formulated based on available empirical data, including – *inter alia* – the demographic and income distribution of households, the distribution of loans disbursed as well as the location of homes. Households in the model may purchase homes (even for an investment purpose) and may borrow for this, or those who do not have a home meet their residential needs in the rental market.

The impact on lending exerted by the various housing and credit market subsidies introduced by the government to encourage having children was quantified with the help of the model. The measures considered are as follows: the HPS, which can be used for the purchase of newly built and used homes; the rural HPS, which can be applied for the purchase and renovation of homes; as well as the prenatal baby support loan. In view of the announced deadlines of these schemes, the rural HPS and the prenatal baby support loan may be applied for until June 2022 and December 2022 in the model, respectively. The amount of the HPS always complies with the prevailing law, depends on the number of children, can be applied for in advance as well, while the rural HPS can be used only in certain villages. It has also been included in the model that the amount of the prenatal baby support loan that can be applied for is HUF 10 million, and both the HPS and the prenatal baby support loan can be used as down payment upon borrowing for housing. Under the conditions presented, in the model both the a ggregate amount of the subsidies and its changing over time harmonise with the actual data. Borrowing households must comply with the prevailing debt cap rules (loan-to-value (LTV) and payment-to-income (PTI) ratios); the exact value of the requirements corresponds to the prevailing domestic rules. The first simulated period of the model is January 2018; the interactions are examined at a monthly frequency until December 2024.

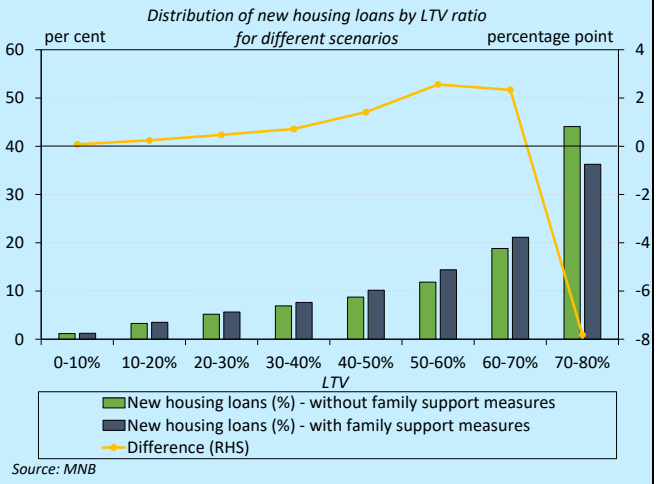
For a comprehensive impact assessment, the model was run using two scenarios. In one of them, we presumed that families cannot have recourse to any form of family support, whereas in the other one the subsidies were available in the form and period presented above. The difference between the two scenarios was considered to represent the combined effect of the prenatal baby support loan and the HPS on the housing and credit markets. According to our findings, until 2021 some HUF 240 billion more housing loan disbursements in total may have materialised because of the related borrowing, with nearly half of this supporting home purchases in Budapest and half in the countryside, and this amount corresponds to approximately 7.5 per cent of the volume of new loans provided. With the phasing out of the prenatal baby support loan and the rural HPS, the surplus may decline to HUF 200 billion by end-2024: although the surplus does not change significantly in Budapest after 2021, it may decline by HUF 50 billion in the countryside in 3 years. This is an indication that some of the house purchases have been brought forward, and without the HPS or the prenatal baby support loan they would have been implemented by households only later. It is especially true in the case of rural households, where the phasing out of the measures results in a decline in the additional lending to nearly one half compared to the end-2021 'peak'.

Cumulated surplus in new housing loans in case of family allowances



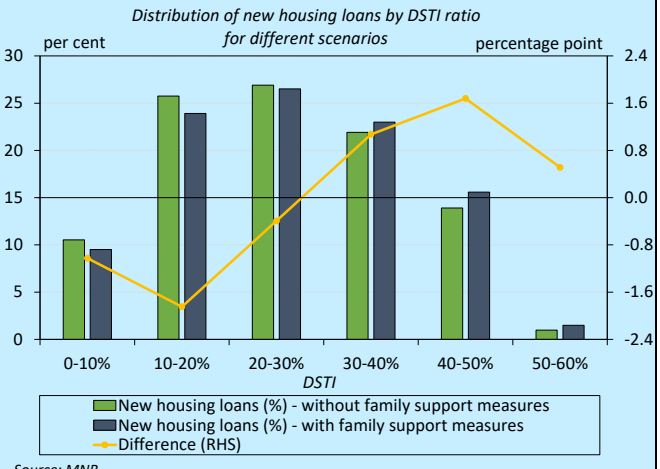
Source: MNB

The additional lending when taking the family subsidies into account partly stemmed from the fact that house prices were also higher in this scenario, by 9 per cent in Budapest and 10 per cent in the countryside from 2018 to 2021. The composition of borrowing households also changed because of the measures, as families were helped by the schemes, whereas the situation of non-eligible households that do not have any housing wealth was made more difficult by the higher house prices. According to our findings, 3.4 per cent more households borrowed housing loans in addition to the family subsidies in 2018 and 2019, but fewer households did so than in the alternative scenario from 2020. In aggregate terms until 2024 more households borrow without family subsidies, but the difference is minimal, at 0.3 per cent. Moreover, in addition to the crowding-out effect of the higher prices, the lower borrowing may also be explained by the fact that, in addition to the HPS and the prenatal baby support loan, certain households did not need to borrow from the market. Moreover, the simulation result that the number of those who purchased their first home was 35 per cent higher in Budapest and 27 per cent higher in the countryside in cumulative terms in seven years corroborates that, overall, the measures helped more families in home purchasing than the number of those who were hindered because of the higher house prices.



Source: MNB

Despite the expansion in volume, the risk of excessive indebtedness is not increasing significantly. The family subsidies may serve as households' own funds in the model, and thus they may have facilitated the access to funds of those households whose access was previously limited due to the LTV requirement, and thus may have contributed to the improvement of their housing circumstances. Overall, based on the distribution of new loan disbursements between 2018 and 2024 according to LTV, also taking account of the HUF 200 billion additional lending, the share of the riskiest category, which is the closest to the regulatory limit, declined considerably (by some HUF 400 billion in seven years), and thus with the family support measures the household segment's indebtedness situation according to collateral may be considered more favourable. As a result of the family support measures only minimal change is observed in the distribution according to PTI of newly disbursed housing loans, where other repayment instalments of the household were also considered. In this case the distribution shifts slightly towards the categories that show higher indebtedness (compared to income), but the increase in these categories is 0.5–1.5 percentage points only and is the smallest in the riskiest interval.



Source: MNB

Accordingly, overall, based on the findings of the model we can say that the family support measures may increase the volume of new housing loans by some HUF 200 billion until 2024, two thirds of which may finance home purchases in Budapest and one third in the countryside. Nevertheless, at the system level the increased lending activity does not entail any significantly higher household indebtedness compared to incomes or the collateral value of the houses, and thus the family subsidies do not result in an increase in financial stability risks. At the same time, the situation of those who purchased their first home was greatly helped by the schemes. Their number is much higher, by 35 percent in Budapest and by 27 percent in the countryside, in the case of the scenario that contains the family support measures.

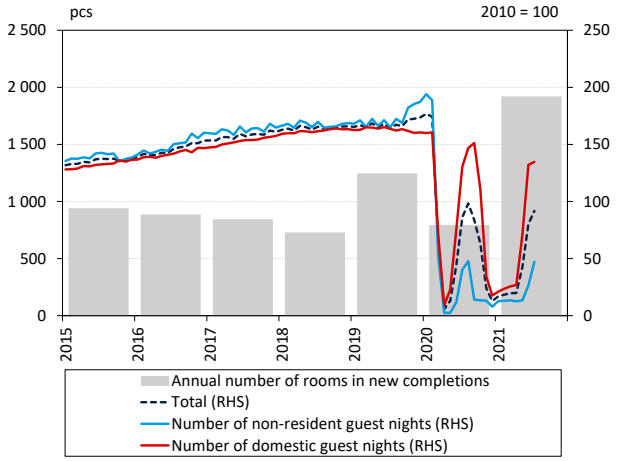
5.2. Due to the changing needs for commercial real estate, the market benefits from the positive effects of the recovery to a lesser degree

Table 1: Main features of the Hungarian commercial real estate market in 2021 H1

	Office	Industrial-logistics	Retail (shopping centre)	Hotel
Vacancy rate / Room occupancy	9.1%	4.0%	7.0%	Room occupancy: 37.6%
Change in vacancy rate versus June 2019	+3.5%-points	+1.9%-points	+2.9%-points	-28.1%-points
Change in average demand versus pre-COVID level	-40%	+44%	-	-73%
New supply under construction as a percentage of existing stock	+11%	+15%	+7%	+5%
Change in average offered rent versus June 2019	+8%	+3%	-	-
Change in investment yield versus June 2019	-25 bp	-50 bp	+75 bp	-
Ratio of loans in moratorium as of June 2021	32%	27%	41%	80%

Note: Based on end-June 2021 data. Factors pointing to a decline or increase in the value of properties are in red and green, respectively. The change in average demand compared to the pre-pandemic level is the comparison of the averages of the quarterly total (gross) leasing and the monthly number of overnight stays in hotels for the period of 2018–2019 and the period from April 2020 to June 2021. Source: CBRE, Cushman & Wakefield, HCSO, MNB

Chart 48: Hotels completed and monthly numbers of overnight stays at commercial accommodation establishments



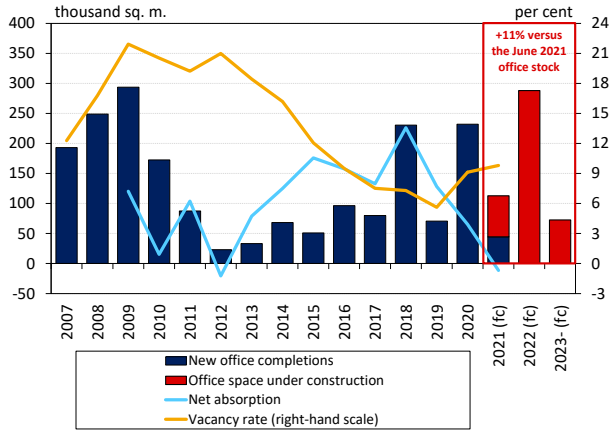
Note: For 2021, the annual number of newly completed rooms includes those completed in H1 as well as the ones expected to be completed in H2. Number of overnight stays on the basis of seasonally adjusted data, monthly average of 2010 = 100. Source: CBRE, HCSO, Hungarian Hotel & Restaurant Association

Aside from the industrial-logistics segment, demand for commercial real estate segments remains low, and investment activity also remained subdued. Except for the industrial-logistics segment, demand for commercial real estate has shrunk considerably since 2020 Q2. This mainly jeopardises the operation of hotels: compared to the average monthly number of guests in the 2018–2019 period, the average monthly number of guests in domestic hotels fell by 72 per cent in the period between April 2020 and June 2021 (Table 1). The situation of the industrial-logistics segment is favourable, but the numerous new development projects that are under construction or planned may exert mounting pressure on rents, although they may also make domestic properties more competitive at the tenders of international logistics lessees. The performance of the retail segment is sensitive to the waves of the pandemic, but one positive aspect is that sales are able to quickly return to previous levels following an easing in the pandemic situation. Similarly to 2020, investment turnover remained at a moderate level, which is attributable to the uncertainty stemming from the changes accelerated by the pandemic as well as to a shortage of real estate offered for sale.

The recovery of tourism and the related hotel sector may take several years. The number of overnight stays at commercial accommodation establishments in June and July 2021 corresponded to 48 and 56 per cent of the data for the same months of 2019. At the same time, these levels represent significant increases compared to the overnight stays between January and May apart from seasonal effects (Chart 48). Within demand for accommodation, the number of foreigners' overnight stays declined to a greater degree: compared to the same months of 2019, it was below 10 per cent from the start of the year and then rose to 15 and 29 per cent in June and July, respectively. According to the forecast of Oxford Economics, in tourism the pre-pandemic state is not expected to return before 2024.[24] As a result of the changes in overnight stays, at end-June 2021, 80 per cent of the project loans granted to finance hotels were in moratorium. Taking account of the

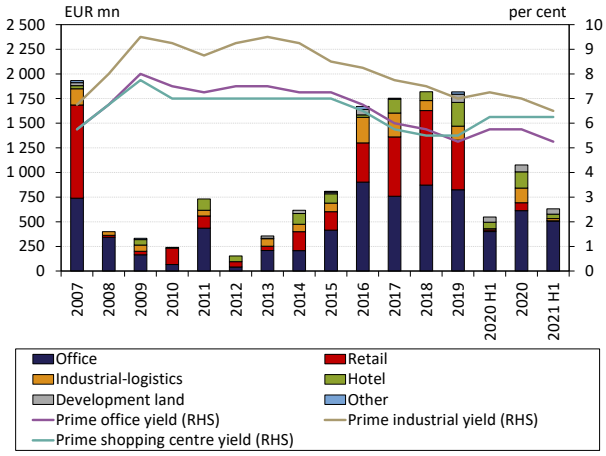
[24] Source: https://blog.oxfordeconomics.com/content/global-travel-outlook-highlights-risks-june-2021

Chart 49: Development activity and vacancy rate in the Budapest office market



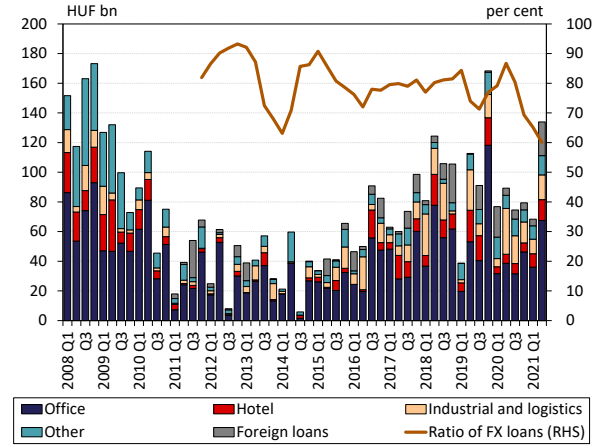
Note: Net absorption: shows changes in the lease stock in the period considered. Based on end-June 2021 data. Source: Budapest Research Forum, Cushman & Wakefield

Chart 50: Investment volume of the Hungarian CRE market, its composition and prime yields



Source: CBRE, Cushman & Wakefield, MNB

Chart 51: Composition of the credit institutions sector's project loan disbursements covered by commercial real estate by type of financed property



Note: No data breakdown by real estate type is available for loans provided to foreign companies before 2011. For the individual quarters, the ratio of FX loans shows four-quarter rolling ratios. Source: MNB

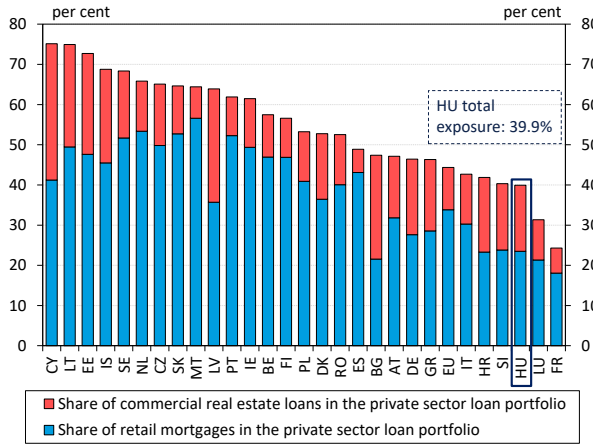
expectations of a slow recovery in the segment, significant credit risk may materialise in the case of hotel loans following the expiry of the moratorium.

For the time being, demand for office space has not recovered because of the transformation of office work and the related uncertainties. Compared to previous years, office market demand has fallen by some 40 per cent since the start of the pandemic. Even the restart of the Hungarian economy in 2021 Q2 was unable to move the demand from this low level. In addition to this low demand, newly completed office buildings are continuously increasing the stock, entailing a rise in the vacancy rate in the Budapest office market. By end-June 2021, the vacancy rate for modern offices in Budapest was at 9.8 per cent, corresponding to increases of 2.3 percentage points year on year and 0.7 percentage point compared to end-2020 (Chart 49). This trend is expected to continue, as a significant amount of office space is being developed, and in the next 1.5–2 years the stock of modern offices in Budapest is projected to expand by 11 percent.

The investment market of commercial real estate is characterised by investor price search and a shortage of supply. In 2021, domestic investment turnover in commercial real estate was more favourable than in 2020, as the volume in H1 was 15 percent higher in year-on-year terms (Chart 50). Nevertheless, investment turnover remains low compared to the pre-pandemic periods. In H1, 81 per cent of the transactions were related to office buildings, including several high-value transactions exceeding EUR 50 million. Following a rise in 2020, prime yields in the office and industrial-logistics segments declined again in 2021, with the latter falling short of the end-2019 level. No major transactions took place in the segment of shopping centres in 2021, and the yield levels are also unchanged. Looking ahead, the monetary tightening cycle launched in 2021 is resulting in a decline in the yield premiums offered by real estate investments, which has a dampening effect on investment activity. At the same time, according to market experts, there is significant liquidity to be invested in the real estate market, which may maintain the volume of real estate transactions even if yield premiums decline.

As a result of the FGS Go! scheme, the share of project loans borrowed in foreign currency declined. In 2021 H1, credit institutions disbursed project loans covered by commercial real estate amounting to HUF 202 billion, corresponding to growth of 22 per cent compared to the same period of 2020 (Chart 51). This growth is primarily attributable to the disbursements in 2021 Q2. The outstanding

Chart 52: Share of retail mortgages and commercial real estate loans in the private sector loan portfolio (2021 Q2)



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

quarterly disbursement (HUF 134 billion) is partly explained by a one-off, high-value item and the increase in the number of contracts concluded prior to the depletion of the allocation of the FGS Go! scheme. Within the disbursements, the ratio of HUF-denominated loans has increased since 2020 Q2, which is also strongly attributable to FGS Go!. Within the disbursements, the average ratio of FX loans calculated for the one year preceding end-June 2021 declined to 60 per cent from the level of around 70–90 per cent recorded between 2015 and 2019. The decline seen in disbursements is already reflected in the loans outstanding. At end-June 2021, the ratio of FX loans decreased to 79 per cent, a level unseen in the past 15 years. Nevertheless, FX lending in the project loans segment may strengthen again with the phasing out of FGS Go!.

Hungarian banks' exposure to the real estate market is relatively low in a European comparison. According to the EBA's data collection, the share of household mortgage and commercial real estate loans within Hungarian banks' outstanding loans to the private sector is low (at 39.9 per cent) in a European comparison. According to the EBA's data, this ratio is the third lowest among European countries (real estate market exposures are also relatively low compared to total assets in Hungary). With a ratio of 75.2 per cent, Cypriot and Lithuanian banks have the highest exposure to the real estate market within loans outstanding. The Czech, Slovak and Polish banks' real estate market exposure within loans outstanding is 65.1, 64.6 and 53.2 per cent, respectively (Chart 52).

6. Portfolio quality: phasing out the general payment moratorium will not shock the banking sector

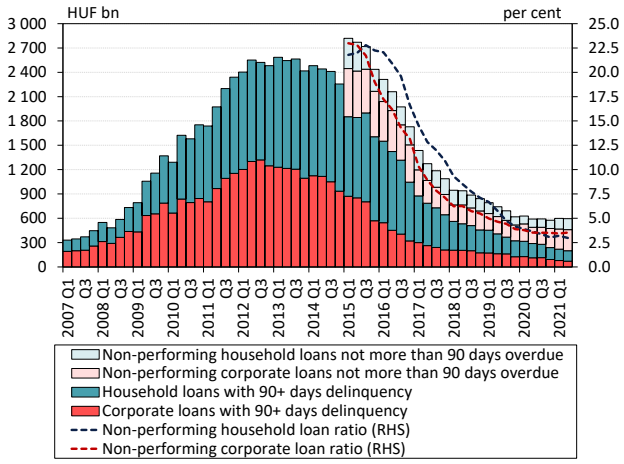
In 2021 H1, the ratio of non-performing loans in the credit institution sector was stagnant at 3.5 per cent in the corporate segment and 3 per cent in household segment. These unchanged figures resulted from a dynamic expansion in lending, banks' portfolio cleaning activity and a slight increase in non-performing portfolios. However, due to the payment moratorium, the examination of non-performing portfolios does not present a complete picture of the changes in portfolio quality. Loan loss coverage of corporate and household loans outstanding declined in H1, especially in the case of Stage 3 loans, which is mainly attributable to derecognitions and write-offs. The ratio of Stage 2 loans, which represent portfolios with elevated credit risk, increased by 3 percentage points, and thus 76 per cent of the total loan portfolio of credit institutions remained rated as problem-free and 21 per cent as Stage 2 in mid-2021.

As of mid-2021, 35 per cent of eligible corporate loans and 50 per cent of eligible household loans were in payment moratorium. As a proportion of total loans outstanding, this represents 21 per cent and 33 per cent, respectively. According to our estimation, 4 per cent of the total corporate loan portfolio and 23 per cent of the household segment may be eligible for the extended period of the moratorium running from November 2021 to June 2022. 2 per cent of corporate loan portfolio, and 5 per cent of household loan portfolio take part in the third part of moratorium according to the preliminary data. With regard to portfolio quality following the phasing out of the general payment moratorium in October 2021, one positive sign is that delinquency is not typical of the loans disbursed since the introduction of the moratorium (i.e. loans not eligible for the moratorium) and that the phasing out of the programme did not result in any major NPL increase in the European countries that had previously introduced payment moratoria.

6.1. Further increase in the share of exposures in moratorium in the category of elevated credit risk

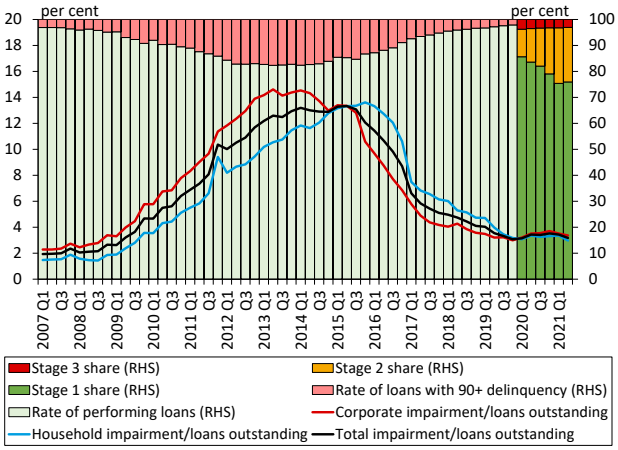
The increase in delinquent loans was offset by portfolio cleaning and the expansion in lending, and thus the NPL ratio remained unchanged. In 2021 H1, corporate and household loans over 90 days past due declined by HUF 21 billion and HUF 17 billion, respectively, in the credit institution sector (Chart 53). In parallel with that, however, the portfolio of loans that are not over 90 days past due, but are non-performing, increased by HUF 24 billion and HUF 33 billion, respectively. With the dynamic expansion in lending, the increase in loans outstanding and banks' loan portfolio cleaning activity offset the slight rise in non-performing loans in H1. As a result, the ratio of non-performing loans (NPL ratio) remained at 3.5 per cent in the corporate segment and 3.0 per cent in the household segment. Loans over 90 days past due account for one fifth and one half of non-performing corporate and household loans, respectively. At end-June 2021, loans classified as non-performing amounted to HUF 330 billion and HUF 264 billion in total in the two portfolios.

Chart 53: Ratio of non-performing corporate and household loans in the credit institution sector



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

Chart 54: Loan loss coverage and distribution by quality



Note: Calculated by clients until 2010 and by contracts from 2010. Stage rating is available from 2020 onwards. Source: MNB

Table 2: Movements of corporate loans between loan loss categories between 2020 Q4 and 2021 Q2

Loans in moratorium					
In proportion to the corporate loan portfolio in moratorium		Impairment category 2021 Q2			
		Stage 1	Stage 2	Stage 3	Total
Impairment category 2020 Q4	Stage 1	44.9%	9.3%	0.1%	54.2%
	Stage 2	2.6%	34.7%	2.6%	39.9%
	Stage 3	0.0%	0.1%	5.8%	5.9%
	Total	47.5%	44.0%	8.5%	100.0%

Loans not in moratorium					
In proportion to the corporate loan portfolio not in moratorium		Impairment category 2021 Q2			
		Stage 1	Stage 2	Stage 3	Total
Impairment category 2020 Q4	Stage 1	81.6%	4.0%	0.1%	85.7%
	Stage 2	2.7%	9.8%	0.1%	12.6%
	Stage 3	0.1%	0.0%	1.6%	1.7%
	Total	84.3%	13.9%	1.8%	100.0%

Note: Credit institutions' data. Ratios on the basis of outstanding amounts at the end of 2021 Q2. Source: MNB

Table 3: Movements of household loans between loan loss categories between 2020 Q4 and 2021 Q2

Loans in moratorium					
In proportion to the household loan portfolio in moratorium		Impairment category 2021 Q2			
		Stage 1	Stage 2	Stage 3	Total
Impairment category 2020 Q4	Stage 1	41.8%	28.2%	0.9%	70.8%
	Stage 2	4.3%	20.2%	0.7%	25.2%
	Stage 3	0.0%	0.2%	3.8%	4.0%
	Total	46.1%	48.6%	5.4%	100.0%

Loans not in moratorium					
In proportion to the household loan portfolio not in moratorium		Impairment category 2021 Q2			
		Stage 1	Stage 2	Stage 3	Total
Impairment category 2020 Q4	Stage 1	82.9%	4.9%	0.1%	87.9%
	Stage 2	3.7%	6.2%	0.1%	10.0%
	Stage 3	0.1%	0.1%	2.0%	2.1%
	Total	86.6%	11.2%	2.2%	100.0%

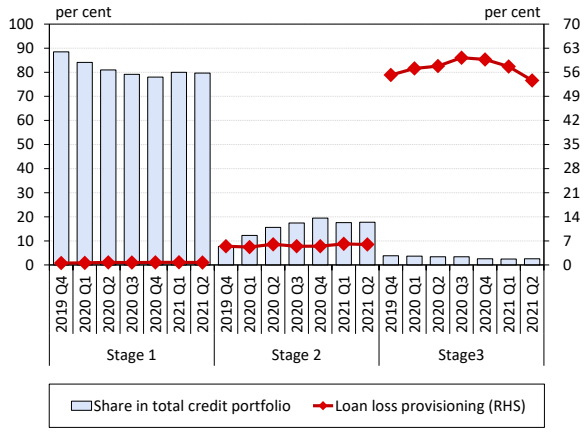
Note: Credit institutions' data. Ratios on the basis of outstanding amounts at the end of 2021 Q2. Source: MNB

As of mid-2021, 76 per cent of the total loan portfolio of credit institutions remained classified as problem-free. In view of the payment moratorium, in addition to the examination of non-performing loan portfolios, loan loss coverage and the classification into Stage categories[25] provide a clearer picture of the changes in portfolio quality. Following an increase last year, loan loss coverage of both corporate and household loans outstanding declined in 2021 H1. In addition to the expansion in loans outstanding, this is explained by the decrease of loan loss provisioning. Accordingly, at end-June the average coverage of the corporate and household portfolios amounted to 3.4 per cent and 3.0 per cent, respectively (Chart 54). In the developments in the Stage classification, which expresses the credit risk, the ratio of Stage 2 loans, which represent the portfolio with elevated credit risk, increased by 8 percentage points in a year and by 3 percentage points in the past half year. One contributor to this was that banks must indicate loans that are in moratorium for at least 9 months in this category. Against the background of the increase in the ratio of Stage 2 loans, deterioration and improvement were both observed in the remaining portfolio. As a result, as of mid-2021, 76 per cent of the total loan portfolio of credit institutions remained classified as problem-free, while 21 per cent was classified into Stage 2.

The reclassification between Stage categories primarily affected loans in moratorium. Compared to end-2020, 15 per cent of the corporate loan portfolio and 34 per cent of household loans outstanding in moratorium were reclassified. Of that, 12 percentage points and 30 percentage points, respectively, meant reclassification into a riskier category; improvement in credit quality concerned a mere 3–5 per cent of the loans in moratorium. The rise in credit risks was mainly reflected in the increase in the ratio of loans classified into the Stage 2 category: 9 per cent of corporate loans and 28 per cent of household loans in moratorium were reclassified from problem-free into the elevated credit risk category. Accordingly, more than half of the loans in moratorium are already in Stage 2 or Stage 3 in both segments (Table 2 and 3, top panels).

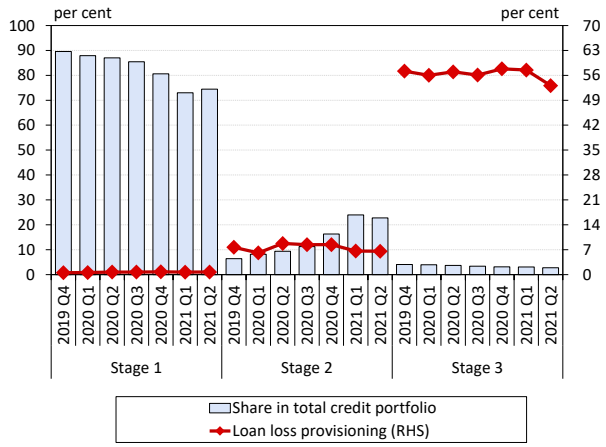
[25] Stage 1: loan loss provisioning for financial assets whose credit risk has not increased significantly since initial recognition. Stage 2: loan loss provisioning for financial assets whose credit risk has increased significantly since initial recognition, but no event occurred that objectively caused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

Chart 55: Corporate credit portfolio and loan loss provisioning by Stage categories



Note: Banking system. 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 occurred that objectively caused credit loss. Stage 3: loan loss provisioning for non-performing financial assets. Source: MNB

Chart 56: Household credit portfolio and loan loss provisioning by Stage categories



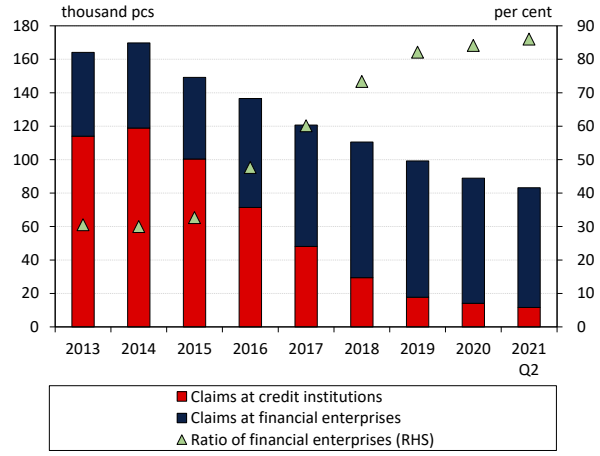
Note: Banking system. Stage 1: loan loss provisioning for financial assets whose credit risk has not increased significantly since initial recognition. Stage 2: loan loss provisioning for financial assets whose credit risk has increased significantly since initial recognition, but no event occurred that objectively caused credit loss. Stage 3: loan loss provisioning for non-performing financial assets. Source: MNB

A slight increase in credit risks was also typical of loans not participating in the moratorium. During H1, although to a lesser degree than in the case of loans in moratorium, classification into riskier categories was also typical of loans not participating in the moratorium. As a proportion of the loans already outstanding at end-2020, 4 per cent of the corporate loan portfolio and 5 per cent of household loans outstanding were reclassified into a Stage category indicating higher credit risk than before, while classification into less risky categories corresponded to 3 and 4 per cent, respectively (Table 2, 3, bottom panels). Accordingly, on the whole, it was primarily the ratio of the Stage 2 portfolios that increased in H1 by 1 percentage point each. 84 per cent of the corporate loan portfolio and 87 per cent of household loans outside the moratorium loans were problem-free, while Stage 2 loans in the two segments accounted for 14 per cent and 11 per cent, respectively.

The loan loss coverage of loans classified into Stage 3 declined in the corporate segment in particular. On the whole, the coverage of problem-free (Stage 1) loans remained unchanged in 2021 H1. The ratio of recognised impairment for Stage 2 loans rose slightly, by 0.5 percentage point, while the coverage ratio of Stage 3 loans fell by 6.1 percentage points compared to 2020 Q4 (Chart 55). Accordingly, by end-H1 the average coverage ratio amounted to 5.9 per cent and 53.6 per cent, respectively. The decline in loan loss coverage of corporate loans in the Stage 3 category is mainly attributable to derecognitions and write-offs.

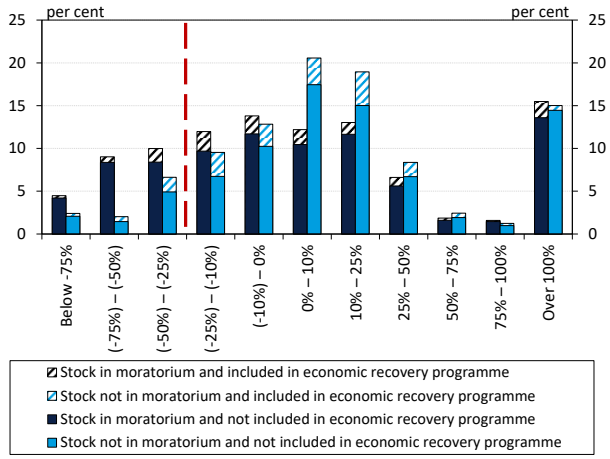
Banks also reduced the coverage of households' Stage 3 loans. To various degrees, all Stage categories in the household loan portfolio were affected by the decline in loan loss coverage. The coverage of Stage 1, Stage 2 and Stage 3 loans declined by 0.1 percentage point, 1.9 percentage points and 4.7 percentage points, respectively, at banking sector level. At end-H1, loan loss coverage of Stage 3 household loans amounted to 53.1 per cent in total; the decrease is attributable to the effect of derecognitions and write-offs in this segment as well (Chart 56).

Chart 57: Number of overdue household mortgage loan receivables



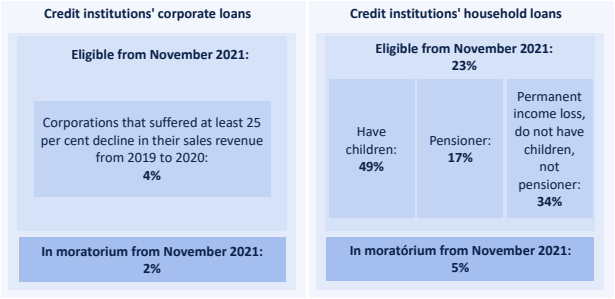
Source: MNB

Chart 58: Changes in corporate sales revenues from 2019 to 2020 by participation in the moratorium



Note: Calculated on the basis of corporations that have tax declaration for both 2019 and 2020. Source: NTCA, MNB

Chart 59: Share of loans eligible for moratorium after October 2021 within total loans outstanding



Note: Pensioners and those bringing up children are not indicated among those who experience a decline in income. Source: MNB

6.2. The participation is moderate in the third part of the moratorium

Transactions that became problematic earlier have mostly been removed from the credit institutions portfolio. A significant part of the loans that became non-performing after the 2008 crisis were removed from the balance sheet of the banking system as a result of the accelerating portfolio cleaning activity from 2016 onwards. Consequently, on the one hand, the proportion of overdue mortgage loans held by financial corporations (receivables managers) has risen from one third to 86 per cent. On the other hand, financial enterprises, mainly through collateral sales and rescheduling, substantially reduced the number of overdue contracts, which were halved between 2013 and mid-2021 (Chart 57). Credit institutions have thus faced the effects of the coronavirus epidemic with a cleaner balance sheet.

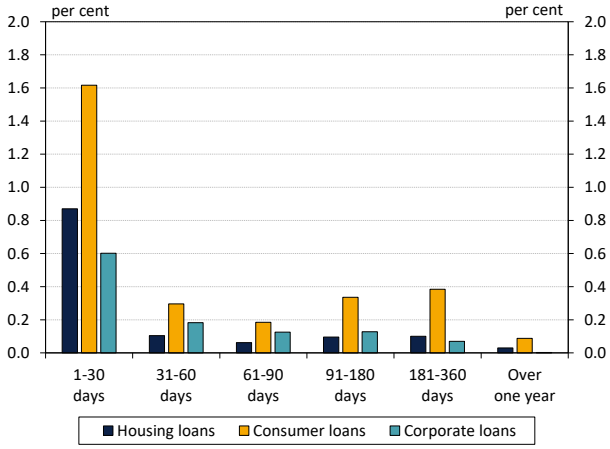
As of mid-2021, 35 per cent and 50 per cent of eligible corporate and household loans, respectively, were in payment moratorium. Recourse to the moratorium fell slightly in 2021 H1. While at the end of last year roughly 40 per cent of the outstanding corporate loans eligible for moratorium were in moratorium, this ratio dropped to 35 per cent in June. Compared to the total corporate loan portfolio, the share of loans in moratorium amounted to only 21 per cent in June. In the household segment, nearly 50 per cent of the customers eligible for the moratorium used it for at least one of their loans, corresponding to 48 per cent of the eligible loans outstanding on a volume basis. Compared to total loans outstanding, the ratio of loans in moratorium is 33 per cent in the mid of 2021.

According to the preliminary data, 2 per cent of corporate loan portfolio, and 5 per cent of household loan portfolio stay in the moratorium from November. The sales revenue of 31 per cent of the enterprises and companies using the moratorium declined by at least 25 per cent from 2019 to 2020 (Chart 58). These companies, which are eligible for the extended period of the moratorium from November 2021 until July 2022, account for 24 per cent of the loans in moratorium and corresponded to 4 per cent of total loans outstanding.[26] In the retail segment, 71 per cent of the debtors currently in moratorium

[26] Eligibility for further participation in the payment moratorium is determined by Government Decree No. 536/2021. Eligible persons: following 18 March 2020, (a) those people in whose household disposable income declined permanently, (ab) jobseekers, (ac) public employed. Also eligible, who (ba) support a child under the age of 25 at the time of the application, (bb) supports a child with changed working ability who has reached the age of 25, (bc) expecting a child beyond the 12th week of pregnancy, (bd) receive a pension in their own right or a relative's pension. (c) Net sales of the company decreased by at least 25 per cent in the 18 months preceding the application, and the company did not enter into a new preferential recovery loan or loan agreement between 18 March 2020 and the date of submission of the application.

continue to have been eligible for the extended moratorium, which corresponded to roughly 23 per cent of all retail loans outstanding (Chart 59). According to preliminary data, however, participation is substantially lower: 2 per cent of corporate loan portfolio, and 5 per cent of household loan portfolio stay in the moratorium from November.

Chart 60: Delinquency distribution of household loans disbursed after the introduction of the moratorium



Note: Volume-based distribution. Source: MNB

Delinquency is not typical of the loans disbursed since the introduction of the moratorium. We can only make estimations regarding the changes in portfolio quality following the phasing out of the general moratorium. An indication of future solvency may be found in the default patterns for loans issued after 18 March 2020, which are not eligible for the moratorium, as the effects of the recession may have affected both old and new customers, but the safety net provided by the moratorium was not available to new customers. In both the household and corporate segments, only a small proportion of these loans became delinquent by end-August 2021. Exposures with days past due amount to 1.3 per cent in the case of new housing loans, 2.9 per cent in the case of new consumer loans and 1.1 per cent in the case of corporate loans. However, delays up to one month may also be attributable to the scheduling of monthly cash flows. Therefore, it is also worth examining the ratio of those who are at least 1 month delinquent. This ratio in the three segments is 0.4 per cent, 1.3 per cent and 0.5 per cent, respectively (Chart 60). By comparison, the proportion of those with a delay of at least one month is 8.8 per cent for previous retail foreign currency-denominated mortgages, 1.2 per cent for HPS loans and 2.6 per cent for other mortgages contracted before the moratorium.[27]

[27] Delinquencies are lower at the beginning of the life of loans, see the MNB's Financial Stability Report of December 2019 (p. 37).

BOX 7: IMPACTS OF THE EXTENSION OF THE PAYMENT MORATORIUM IN A TIGHTENED FORM

The tightening of the eligibility conditions for the moratorium which have been in force since November 2021 (moratorium phase three) reduced the financial stability risks related to the long-term maintenance of the programme, but at the same time allowed a wide range of debtors to continue the suspension of repayment. One major difference compared to the previous phases of the programme is that participation in the new phase is only possible for those requesting it (opt-in logic). According to preliminary data, only a limited number of debtors declared that they would remain in the moratorium. Our preliminary data suggest that the debtors entering phase three participate in the programme with corporate and household loans outstanding in an amount of some HUF 672 billion in total. In the case of corporate loans, 12 per cent (some HUF 199 billion) of the portfolio that had previously participated in the moratorium (in September 2021) remained in the moratorium, while in the household segment the relevant figures are 18 per cent and around HUF 473 billion. As a proportion of the total loan portfolio, this represents 2 per cent in the case of corporate loans and 5 per cent of the household loans outstanding.

Volume of loans in moratorium on a proportional basis

	September 2021 (as a percentage of the total portfolio)			November 2021	
	Not eligible	**In moratorium**	**Not in moratorium**	**As a percentage of loans in moratorium** in September 2021	**As a percentage of the total portfolio** in September 2021
Households	36%	29%	35%	19%	5%
Corporations	46%	17%	37%	12%	2%
Total	41%	23%	36%	16%	4%

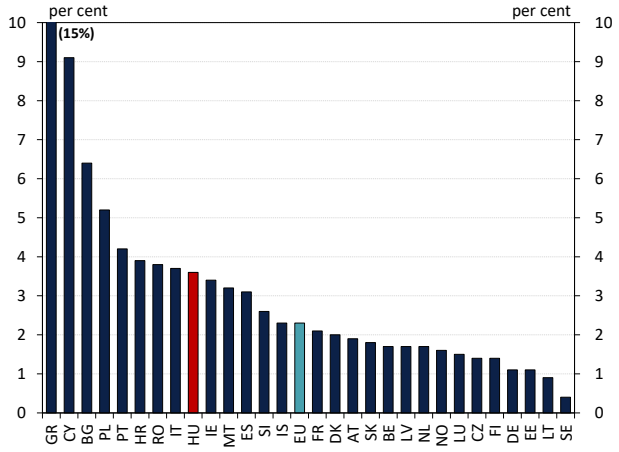
Forrás: MNB

In connection with the extension of the programme, the MNB formulated its expectations vis-à-vis the sector regarding the management of the exposures of customers that entered moratorium phase three in an executive circular. The final form of these expectations took shape following wide-ranging professional discussions with the Hungarian Banking Association, actors of the sector as well as international audit firms. In relation to the circular, in lieu of imposing specific regulations, the MNB formulated guidelines in accordance with the rules and spirit of IFRS 9, of which the most important ones are the following:

(1) Both in the case of households and non-financial corporations, entering the moratorium is considered an increase in credit risk by the MNB, but – with certain limitations – it allows the institutions to assess and determine the degree of the risk.
(2) Considering the many calculation-related and methodological uncertainties existing because of the coronavirus pandemic, although in a modified form, the MNB continues to expect institutions' loan loss coverage in terms of its amount at the institutional level, by segments and stage categories in the period until 30 June 2022 to exceed the average degree of loan loss coverage at the end of 2021 Q2 (reduced by cured, recovered and sold stocks) projected to the current stock data.
(3) The MNB maintains the eased condition according to which it is not necessary to consider compulsory restructuring due to participating in the moratorium as a factor indicating the occurrence of a default event if the decline in financial obligation set forth in Point 47 of the MNB Recommendation 13/2019 (VII. 2.) exceeds the 1-per cent threshold exclusively due to having recourse to the moratorium, provided that no circumstance exists that in itself would result in recording as restructured exposure.

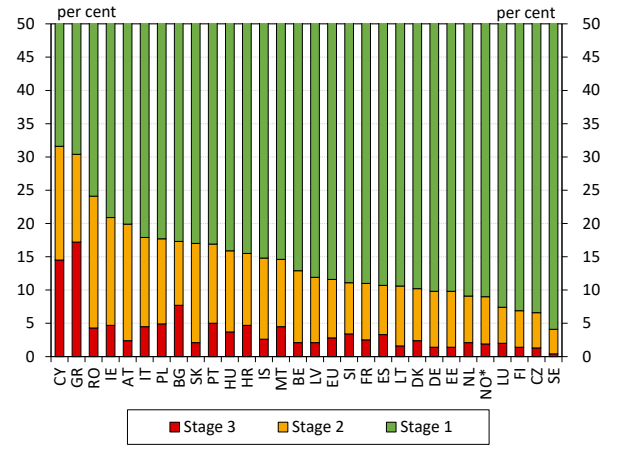
Based on the data submitted, the MNB estimates the impact of moratorium phase three on impairment to amount to approximately HUF 80–90 billion. Nevertheless, it is important to note that the need for additional loan loss provisioning is offset by the expected impairment unblocking effect that comes into being in the case of exposures that were previously in moratorium, but do not enter the new phase of the programme and are now classified into the Stage 2 category. At the same time, the picture is nuanced by the fact that, according to the MNB's circular on the management of moratorium phase three exposures, institutions may only apply this unblocking after 1 May 2022 at the earliest, as pursuant to the provisions of the circular, the impairment recognised for the exposures of debtors that do not participate in the third phase or later leave it and start to repay again can be unblocked following the successful passing of a six-month monitoring period.

Chart 61: Ratio of non-performing loans in an international comparison



Note: Data refers to June 2021. EBA data are based on a sample consisting of 161 banks. Based on non-consolidated data. The Hungarian data is based on 4 banks. Source: EBA

Chart 62: Distribution of loans outstanding according to Stage categories



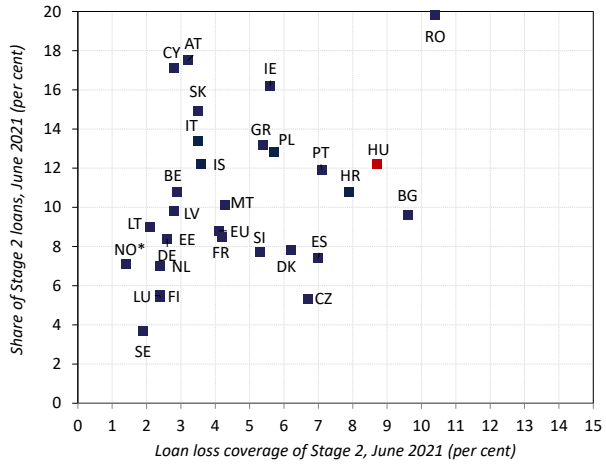
Note: Data refers to June 2021. * In the case of Norway, March 2021 data. EBA data are based on a sample consisting of 161 banks. Based on non-consolidated data. The Hungarian data is based on 4 banks. Source: EBA

6.3. No persistent payment problems seen in the European Union either

For the time being, the NPL ratio does not appear to be increasing in Europe. In a EU comparison, the non-performing loan ratio is the highest in Greece, amounting to 15 per cent in June 2021. NPL ratios below 10 per cent were observed in all the other Member States (Chart 61). According to the data of banks examined by the European Banking Authority (EBA), in Hungary, the non-performing loan ratio was 1.3 percentage points exceeded the EU average at the end of the second quarter. Of the countries of the region, the NPL ratio is higher only in the Polish banking sector (5.2 per cent), whereas non-performing loans account for 1.8 and 1.4 per cent of all loans outstanding in Slovakia and the Czech Republic, respectively.

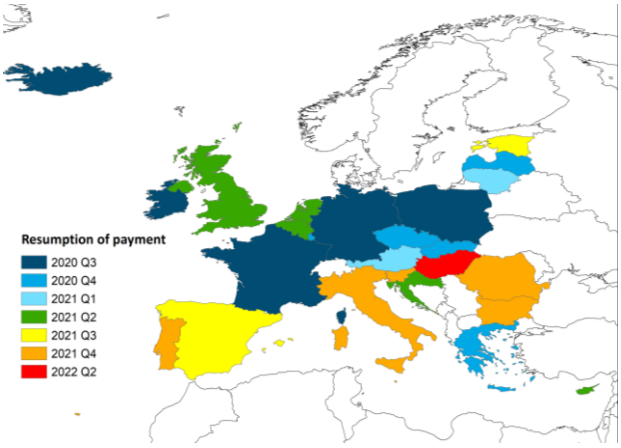
Based on their risk ratings, European banks do not expect any major defaults. With the appearance of the coronavirus pandemic, an increase in credit risk was observed in both the corporate and household segments in the past one year. Although in Hungary the general payment moratorium prevents loans from becoming non-performing, banks are preparing for possible future non-payments by reclassifying the outstanding loans between Stage categories. In international comparison, in June 2021 the highest share of Stage 3 loans of around 17 per cent was observed in Greece, which has the highest NPL ratio as a legacy of the previous crisis, while the EU average is only 3 per cent (Chart 62). In terms of the Visegrád countries, although the NPL ratio is lower in Slovakia than in Hungary, the share of loans outstanding with an elevated credit risk (Stage 2 and Stage 3) is lower in the Hungarian banking sector. In the region, the quality of the loan portfolio can only be considered more sound in the Czech Republic, where the problem-free loan portfolio is 9 percentage points higher than in Hungary.

Chart 63: Loans classified as Stage 2 and their loan loss coverage in an international comparison



Note: * In the case of Norway, March 2021 data. EBA data are based on a sample consisting of 161 banks. Based on non-consolidated data. The Hungarian data is based on 4 banks. Source: EBA

Chart 64: Restart of repayments following the moratorium in Europe



Source: National central banks

In Hungary, loan loss coverage of Stage 2 loans can be considered high in an international comparison. In order to reduce expected losses, banks react to potential increases in non-payments due to the negative economic effects of the pandemic by recognising impairment. As a result of the more conservative attitude of Hungarian regulations, loan loss coverage of the loans in the Stage 2 category is outstanding in an EU comparison: following Romania and Bulgaria, it is the third highest in the EU, and thus Hungary is the leader in the Visegrád region as well (Chart 63). The EU average was less than half of the figure for Hungary at the end of 2021 Q2. At the same time, the differences of the recognised impairment may also stem from differences in the structures of loan portfolios of individual countries, such as the weights of the corporate and household segments compared to one another or the ratio of unsecured loans.

The phasing out of payment moratoria did not result in any material increase in NPLs in Europe. As far as non-performing loans are concerned, at present the economic consequences of the coronavirus pandemic seem to be moderate. Looking at changes in portfolio quality, there are no visible signs that problems similar to the trends observed after the 2008 crisis could arise, despite the fact that the payment moratorium applied had been phased out in most EU Member States by mid-2021 (Chart 64). Nevertheless, attention also needs to be paid to the still existing risk of a further deterioration in portfolio quality with the phasing out of the unprecedented monetary and fiscal stimulus measures, which were introduced upon the outbreak of the pandemic.

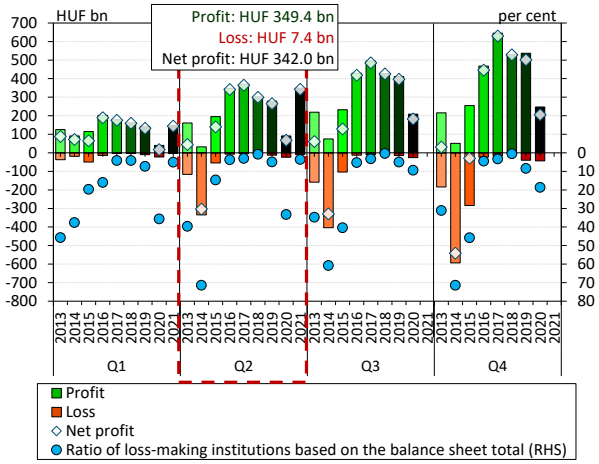
7. Profitability and capital position: profit surges as a result of temporary factors, strong capital position

On the basis of non-consolidated data, the after-tax profit of the credit institution sector amounted to HUF 342 billion in 2021 H1, exceeding the figure for the same period of last year by HUF 274 billion. The consolidated profit, which includes the profits of domestic and foreign subsidiaries as well, amounted to HUF 391 billion. The improvement in profitability affected a wide range of institutions. As a result, the ratio of loss-making institutions based on non-consolidated total assets declined from 22 per cent at end-2020 to 3.6 per cent by end-June 2021. The annual growth in half-yearly profit was mainly attributable to a decline in risk costs and an increase in net interest income. However, more than half of the expansion in this latter item was facilitated by temporary effects related to the coronavirus pandemic. The profitability of domestic credit institutions is outstanding in a European comparison as well: the RoE of 12.8 per cent in 2021 Q2 was again the highest among EU countries. Recognition of impairment and provisioning as a ratio of total assets, which declined considerably in the first half of the year, may significantly increase again due to the extension of the payment moratorium, while the level reached since the beginning of the pandemic already exceeds the European average.

The consolidated capital adequacy ratio of the banking sector reached 19.1 per cent in 2021 H1, marking a historical high. The improvement compared to end-2020 was a result of the inclusion of last year's profits and a portion of this year's H1 profits into own funds. Free capital of the sector amounted to 5.7 per cent as a ratio of the total risk exposure amount at end-June, while calculating with the total H1 profit, the buffer above the OCR at the vast majority of institutions is at least 4 per cent. Although over the short and medium terms banks must prepare to meet the suspended buffer and the postponed MREL requirements, this is not expected to significantly limit the sector's lending capacity.

7.1. Mainly temporary effects are behind the outstanding profit

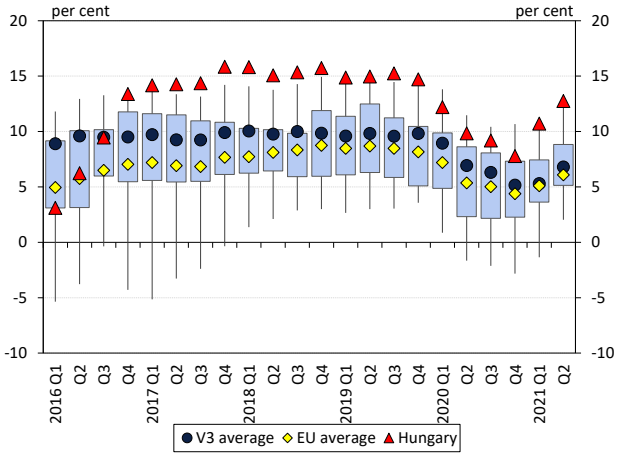
Chart 65: Year-to-date cumulative after-tax profit of the credit institution sector



Note: At the end of June 2021, the ratio of loss-making institutions was 3.4 per cent based on consolidated data. Source: MNB

The after-tax profit of the credit institution sector returned to the level of the years preceding the pandemic. In 2021 H1, the credit institution sector achieved an after-tax profit of HUF 342 billion according to individual, i.e. non-consolidated data, exceeding the value for the same period of last year by HUF 274 billion (Chart 65). 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 22 per cent at end-2020 to 3.6 per cent by end-June 2021. The consolidated profit including the profits of domestic as well as foreign subsidiaries was HUF 391 billion in 2021 H1, corresponding to annual growth of HUF 293 billion. In the same period, the profit of financial enterprises increased by HUF 27 billion to HUF 75 billion.

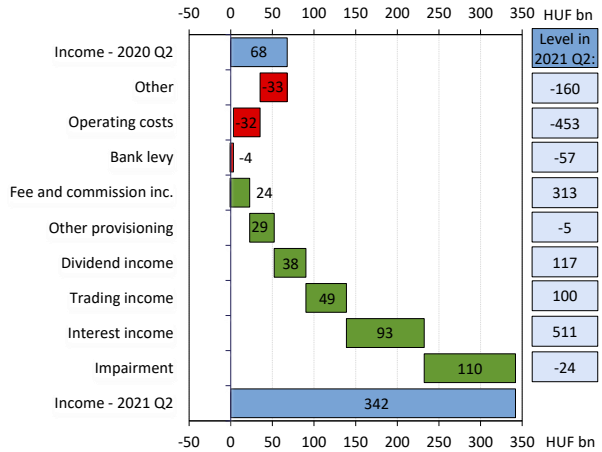
Chart 66: Distribution of the EU credit institution sectors by 12-month rolling after-tax return on equity per cent



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

The profitability of domestic credit institutions is outstanding at the European level as well. Although the consolidated 12-month rolling after-tax return on equity (RoE) of domestic credit institutions declined sharply in the period of the pandemic, steadily approaching the European and regional averages, however, the RoE of 12.8 per cent in 2021 Q2 is again the highest among EU countries (Chart 66). In EU member countries, the average 12-month RoE amounted to 6.1 per cent, while it was 6.8 per cent in the countries of the region at end-June 2021. Not only the level of the domestic sector profitability was outstanding in 2021 H1, but also the half-yearly change, which was also attributable to the drop-out of the 2020 H1 data, stemming from the rolling character of the indicator. The 12-month rolling RoE increased by 5.0 percentage points compared to end-2020, while the European and regional averages rose by 1.7 percentage point and 1.6 percentage point, respectively. At the same time, according to the EBA's spring survey, more than 70 per cent of the major European banks expect improvements in profitability for the next 6–12 months, which is a much higher ratio compared to the previous autumn and spring 2020 surveys.

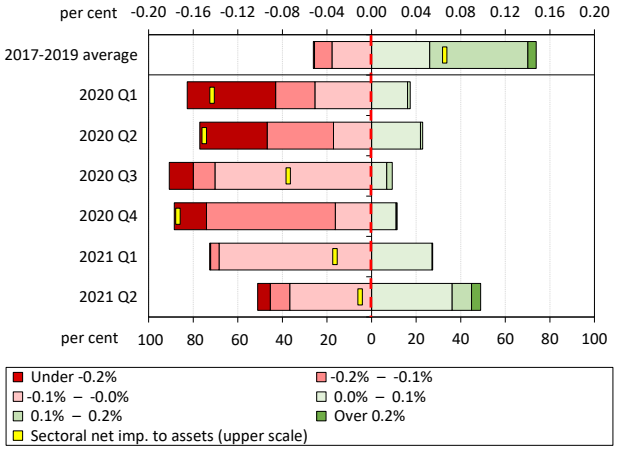
Chart 67: Annual changes in the H1 after-tax income components of the credit institution sector



Note: Nominal values of income components at the end of H1 2021 are shown on the right-hand side. Source: MNB

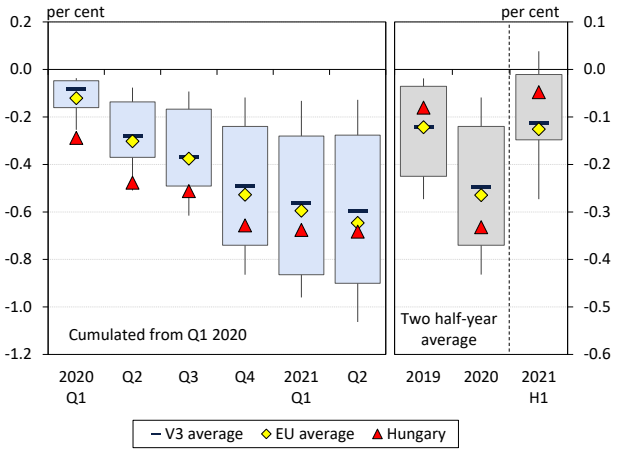
A wide range of income components contributed to the increase in H1 after-tax profit. The improvement of HUF 274 billion is mainly explained by a decline in risk costs: this year impairment and provisioning were HUF 110 billion and HUF 29 billion lower compared to the first half of last year. The considerable degree of the net recognition of impairment and provisioning was, primarily due to the more favourable macroeconomic outlook, resulting in a low level of risk costs (Chart 67). The annual increase of HUF 93 billion in net interest income was another contributor of a similar magnitude to the improvement in profitability. The improvement in all three income components extended almost over the entire sector. The sector-level annual growth of HUF 49 billion in trading income, which was realised with major differences across institutions, may also be considered significant, and as a result, the H1 value was twice as much as last year. Fee and commission income also saw a remarkable annual increase of HUF 24 billion (8 per cent), mainly in connection with Q2, which may have been attributable to reviving economic activity, lending, and payments due to the easing of the coronavirus pandemic. Only the rise in operating expenses pointed to a deterioration in profitability, in a total value of HUF 32 billion, in line with the fact that personnel costs, which had shown

Chart 68: Balance sheet total 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. For the 2017–2019 period, institutions are considered by their average balance sheet total in the category of their average net impairment as a percentage of assets. Source: MNB

Chart 69: Distribution of risk costs as a percentage ratio of total assets for EU credit institution sectors



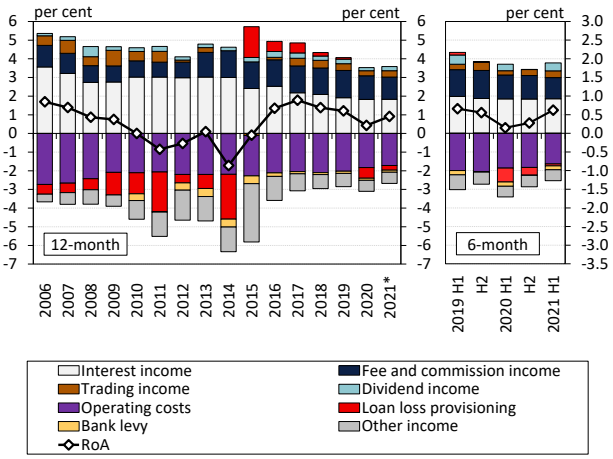
Note: Risk cost means the sum of the consolidated-level net recognition of impairment and provisioning. Vertical line: 10-90 per cent range, rectangle: 25-75 per cent range. Source: ECB CBD

a stagnating trend since the beginning of the pandemic, increased significantly again.

The major improvement in various income components is attributable to temporary effects related to the pandemic. Although by June 2021 the reversal of impairment in net terms on a total assets basis became typical of half of the credit institution sector (Chart 68), the optional extension of the payment moratorium lasting until July 2022, even with the limited participation may entail a need for recognition of further impairment in a magnitude of up to HUF 90 billion this year (Box 8). The Central Bank's measures related to credit stimulus greatly supported the interest income. Expansion in banks' government securities holdings also contributed to the higher net interest income. Although the gradual phasing out of the central bank's liquidity-providing facilities may have the effect of reducing interest income, this may be offset by the interest income-increasing effect of the rise in short-term yields (Box 8). At the same time, the central bank and government measures related to the coronavirus pandemic could lead to a substantial increase in the bank levy payable in the coming years, due to the rapid expansion of the balance sheet total since the outbreak of the epidemic.

Recognition of impairment and provisioning as a ratio of total assets have exceeded the European average in Hungary since the beginning of the pandemic. Although in 2021 H1 the risk costs of the domestic credit institution sector remained well below the European and regional averages, together with the 2020 recognised impairment and provisioning, their values still continue to be above the EU average (Chart 69). As the macroeconomic outlook became more favourable, European banking sectors in 2021 H1 were characterised by declining risk costs, and their European and regional averages corresponded to the average level of 2019. In the first half of this year, risk costs decreased even in those countries where the payment moratorium was already phased out,[28] indicating that the phasing out of the moratorium is generally not coupled with a major rise in risks.

Chart 70: Development of credit institutions' income components as a ratio of total assets



Note: The 12- and 6-month rolling values shown are for the ends of the relevant periods. 2021* refers to 12-month rolling data as of June 2021. Source: MNB

In spite of the outstanding balance sheet dynamics, return on assets improved considerably in 2021 H1. The liquidity-supporting government measures related to the pandemic contributed significantly to the increase in the June 2021 sector-level total assets by 21 per cent year on year and by 7 per cent compared to the previous half year. In the first half of this year, the 12-month rolling after-tax return on assets (RoA) rose above its two-decade historical average by nearly half a percentage point to 0.9 per cent, while the 6-month rolling indicator also increased considerably (Chart 70). A wide range of H1 income components improved not only in nominal terms but also in terms of the 6-month rolling values as a ratio of total assets, with fee and commission income as the main exception. The increase in nominal net interest income was mainly attributable to an expansion in interest-bearing assets, but net interest income as a ratio of total assets also rose slightly compared to the previous half year and year on year as well. The steady decline as a ratio of total assets in the nominally rising operating costs that had started in early 2019 continued in 2021 H1 as well.

BOX 8: EFFECT OF THE RISE IN INTEREST RATES ON BANKS' PROFITABILITY

Inflation has again become a key factor in international economic developments recently, and with the rise in the interest rate environment it indirectly turns attention to the importance of credit institutions' interest rate risk management. In addition to the interest rate risk of trading positions, the interest rate risk appearing in credit institutions' balance sheets expresses that as a result of changes in market interest rates, the income from banking book positions and the institution's economic value of equity may change unfavourably.

Changes in interest rates affect banks' profits and capital positions through various channels. A fundamental feature of the operation of banks is maturity transformation, i.e. the long-term placement of short-term funds. Maturity transformation may cause a difference in time of the repricing structure of receivables and payables, resulting in so-called repricing risk for the credit institution. Repricing risk comprises the effects stemming from the change in the shape of the yield curve (thus primarily in its level, slope and lump). In addition, risk stems from the option characteristics inherent in certain transactions – such as major withdrawals of demand deposits when interest rates increase – as well as from the differences in reference rates serving as basis for the pricing of assets, liabilities and off-balance-sheet items (base risk). Of the factors affecting commercial banks, in addition to credit risk, interest rate risk is one of the main sources of risk.

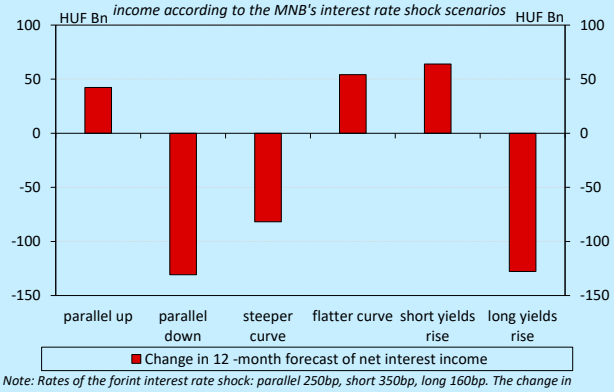
In order to review banks' interest rate risk management, based on interest rate shock scenarios determined by the European Banking Authority (EBA) and the MNB, credit institutions report to the supervisory authority on the changes in the estimated economic value of the banking book and in the 12-month forecast of net interest income every quarter. For assessing and measuring interest rate risk, credit institutions are expected to apply at least one

[28] Countries where payment moratorium was not in force any longer in 2021 H1: Czechia, France, Germany, Greece, Ireland, Latvia, Luxembourg, Poland and Slovakia.

profit-based indicator and also at least one method that measures economic value, which together take into account all the components of the interest rate risk stemming from the banking book (repricing, base and option risks).[29]

The types of individual balance sheet items and the time horizon of measuring the interest rate change fundamentally determine which methodology is the most suitable within the given asset category to measure the impact of the interest rate change on banks' profits. Cash flows originating from interest on loans and deposits outstanding change with the interest period starting date, whereas capturing the change in cash flows allows for the quantification of declines and increases in net interest income. While at the interest period starting date the interest rate shock often completely feeds through into lending rates, in the case of deposits a nearly complete feed-through of the interest rate shock may only be considered realistic for term deposits. At the banking sector level, while a shock-like rise in short-term yields increases banks' interest income looking 12 months ahead, a shock-like fall in short-term yields reduces it. At the banking sector level, a 350-basis point rise in short-term yields results in net interest income that is approximately HUF 64 billion higher, whereas short-term yields result in a fall of some HUF 128 billion in net interest income upon reaching the negative 1-per cent interest rate floor over the 12-month time horizon under review.

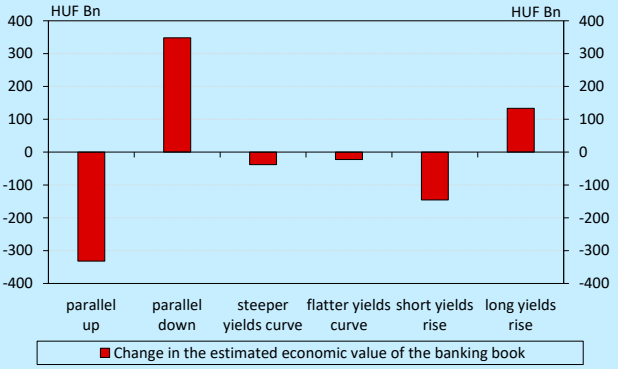
Changes in the 12-month forecast of credit institutions' net forint interest income according to the MNB's interest rate shock scenarios



Note: Rates of the forint interest rate shock: parallel 250bp, short 350bp, long 160bp. The change in the slope of the yield curve is calculated from the reduced change in short and long yields. The lowest level of the yield may be -1 per cent at the nearest point of the curve and 0 per cent at the furthest point. Source: MNB

The impact of fixed-rate financial instruments valued at fair value (such as a major portion of securities) on bank profits in the event of an interest rate shock can primarily be determined by the methodology used to measure the economic value of equity (EVE). An institution's economic value of equity must be calculated as the net present value of the total cash flows of the asset, liability and off-balance-sheet items constituting the banking book. Credit institutions' economic value of equity typically declines when yields rise, as due to the longer duration the present value of asset-side items declines to a greater degree than that of liability-side items. In the case of a sudden rise of 250 basis points in the forint yield curve, economic value of equity declines by approximately HUF 332 billion at the banking sector level. At the same time, upon examining the profitability of banks it is also worth taking into account that following the interest rate shock the book value of securities held until maturity gradually approaches the face value coming closer to maturity.

Immediate change in the estimated economic value of the forint banking book in the credit institution sector according to MNB interest rate shock scenarios

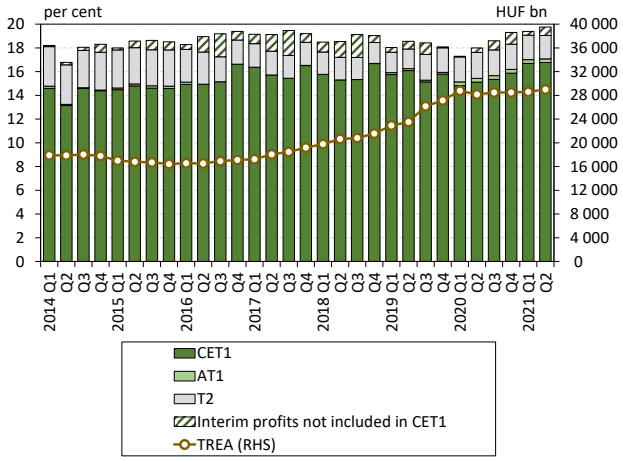


Note: Rates of the forint interest rate shock: parallel 250 bp, short 350 bp, long 160 bp. The change in the slope of the yield curve is calculated from the reduced change in short and long yields. The lowest level of the yield may be -1 per cent at the nearest point of the curve and 0 per cent at the furthest point. Source:

Compared to the previous rules, the application of the EU's CRD V capital requirement rules from 2021 introduced stricter provisions in Hungary in order to prevent and/or mitigate the negative impacts of interest rate shocks affecting banks. If any of the interest rate shock scenarios results in a decline in a credit institution's economic value of equity that is larger than 15 per cent of its Tier 1 capital, the MNB may take supervisory measures. Moreover, the central bank may also intervene if applying the supervisory shock scenarios the credit institution's net interest income declines considerably, or at any time if it deems the interest rate risk stemming from the banking book activity to be significant.

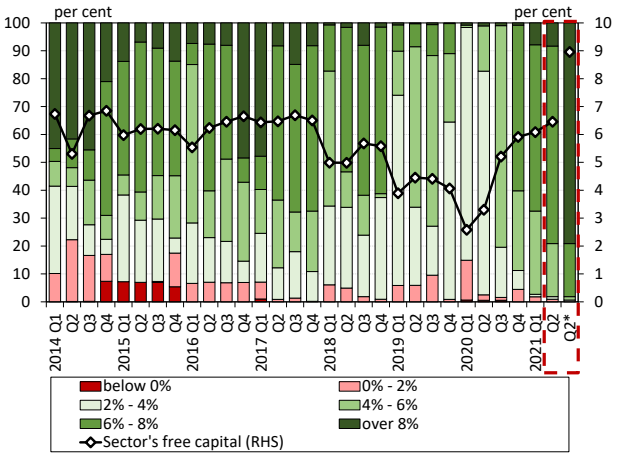
[29] Methodological handbook for assessing and measuring the interest rate risk and its annexes: Methodological manuals (mnb.hu)

Chart 71: Consolidated capital adequacy and total risk exposure amount of the banking system



Source: MNB

Chart 72: Distribution of banks according to the level of own funds over the overall capital requirement weighted by the TREA



Note: Q2* values taking into account the easing of buffer requirements in place in June 2021. The categories indicate the level of own funds above the overall capital requirement as a ratio of the total risk exposure amount. Own funds include total interim or year-end profits as well. Source: MNB

7.2. A potential increase in credit risk may pose the greatest challenge to the currently strong capital position

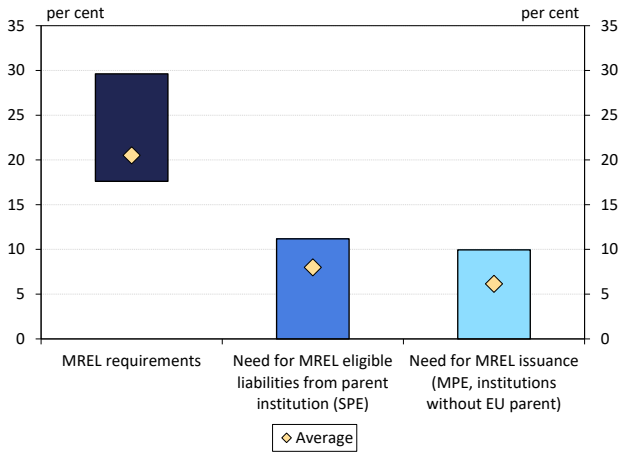
The profit achieved in the past one and a half years further improved the banking sector's capital position. The consolidated capital adequacy ratio (CAR) of the banking sector rose to 19.1 per cent in 2021 H1, which is primarily attributable to an increase in retained earnings (Chart 71). The achieved value can be considered a historical high. Both the auditing of last year's profit[30] and the partial inclusion of the profit achieved in the first half of this year contributed to the increase. The CET1 ratio rose by 90 basis points to 16.8 per cent in the same period. As a result of the pandemic and the easing measures concerning the calculation of exposures, the expansion in the total risk exposure amount (TREA) observed prior to 2020 first turned into a decline and then rose again. The latter dynamics continued in 2021: the TREA increased by 1.8 per cent compared to end-2020, which is primarily attributable to a rise in exposure amounts for credit risk and position risk, while the exposure amount for operational risk slightly offset the expansion.

Calculating with the total interim profits, the vast majority of banks has free buffers of more than 4 per cent above the overall capital requirement. With the improving capital adequacy, the free capital of the banking sector increased by HUF 263 billion to HUF 1,667 billion, corresponding to 5.7 per cent as a ratio of the total exposure amount (Chart 72). Calculating with the easing of the capital conservation buffer (CCoB), this same ratio is 2.5 percentage points higher, i.e. estimated to amount to 8.2 per cent, while also taking into account the total interim profit it would amount to nearly 9 per cent. Based on the TREA, some 98.2 per cent of the sector have free capital of at least 4 per cent above the overall capital requirement (OCR), which includes the CCoB as well (calculating with the total profit). More stretched levels between 0 and 2 per cent are identified in the case of two smaller institutions. For the latter banks, the easing concerning the CCoB helps to maintain lending activity over the medium term, but the 50 per cent and total rebuilding of the buffer requirement due in June 2022 and early 2023, respectively, may

[30] The size of the 2020 profit included in the regulatory capital was presumably also influenced by the extension of the restrictions on dividend disbursements: https://www.mnb.hu/sajtoszoba/sajtokozlemenyek/2021-evi-sajtokozlemenyek/az-mnb-meghosszabbitotta-az-osztalekfizetesre-reszveny-visszavasarlasra-es-teljesitmenyjavadalmazasra-vonatkozo-korlatozasait

necessitate capital replenishment. On the other hand, for the gradual reintroduction of the O-SII requirement concerning systemically important institutions, also starting in 2022, an abundant amount of free capital can be observed in the case of the majority of the banks concerned. Although the MNB has suspended the annual revision of the SyRB rates for an indefinite period of time, in the absence of the revision, certain institutions could be obliged to hold SyRB in view of their current problematic holdings, primarily regarding those participating in the payment moratorium for more than 9 months, which are technically classified as restructured.[31] In the coming years, banks can moderate the rise of their nominal capital requirements by shifting towards environmentally friendly loan purposes through the green preferential capital requirements.[32]

Chart 73: Large banks' MREL requirements and the degree of shortfall depending on resolution strategy



Note: The bars depict minimum and maximum values as a ratio of the TREA. Source: MNB

In 2021, the MNB is revising the MREL requirements in line with the new BRRD2 rules. The MNB's revision, which also concerns the basic principles of determining the MREL requirement, was made necessary by the implementation of the BRRD2 in Hungary in December 2020. In Hungary, the rule based on the capital requirement is effective. The MNB expects the banks concerned to adjust gradually starting 1 January 2022, and they will have to completely meet the requirements in compliance with the relevant provisions of law from 1 January 2024. Calculating with the structure of liabilities observed at end-2020, the MREL deficit of the banks concerned is estimated to amount to around HUF 1,200 billion (Chart 73). In the case of foreign-owned banks where the intervention is at parent bank level upon resolution, the adjustment requirement is HUF 300 billion, which is expected to be funded from parent bank bond issues. At foreign-owned banks where the MNB would intervene in the case of resolution and at Hungarian-owned banks the adjustment requirement is around HUF 900 billion, which is expected to be met through international or domestic bond issues. The degree of actual adjustment necessary until 2024 is significantly affected by the further developments in institutions' balance sheets and risks as well as their profit/loss and the amount of dividend disbursement.

[31] For more details regarding SyRB rates, see: MNB Macroprudential Report, October 2021, Chapter 7.

[32] For more details regarding the green preferential capital requirement, see: https://www.mnb.hu/greenfinance/english

8. Banking sector stress tests: the sector shows strong shock absorbing capacity

As a result of the expansion in banking sector liquidity observed in 2021 H1, the LCR distribution following the serious shock presumed in our liquidity stress test shows an even more favourable picture than the spring 2021 results. Even the institutions whose liquidity position can be characterised as relatively weaker exhibit increased shock-absorbing capacity, whereas taking account of the adjustment opportunities the vast majority of banks would meet the regulatory minimum expectations even in the case of the shock. The Liquidity Stress Index remained close to its theoretical minimum in mid-2021.

Over the two-year horizon of our solvency stress test, both the interest rate hike cycle and the presumed positive interest rate shock improve interest income in the stress scenario, and thus the sector-level profit before loan losses is only slightly different from the baseline scenario. The necessary reclassification between loan loss categories of those entering the third phase following the general moratorium as well as the risks arising in the case of loans exiting the moratorium significantly increase the losses of the banking sector both in the baseline and the stress scenario, but on the whole, the sector reaches nearly half of its profit before loan losses even in the stress scenario. While at the beginning of the scenarios most of the banks record losses, only 11 per cent of the sector expressed in total risk exposure amount close the entire two years with a negative profit. Accordingly, the total capital need of HUF 1.4 billion by the end of the second year can be considered insignificant.

8.1. Banks' liquidity position would remain stable even in the case of stress

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 as well as the contagion effects of these adjustment channels and of defaults on the interbank market are also taken into account[33] (Table 4). Of the changes implemented in the set of monetary policy instruments in spring 2020, we consider the measures that broaden banks' LCR adjustment opportunities[34] in this stress test as well.

Table 4: Main parameters of the liquidity stress test

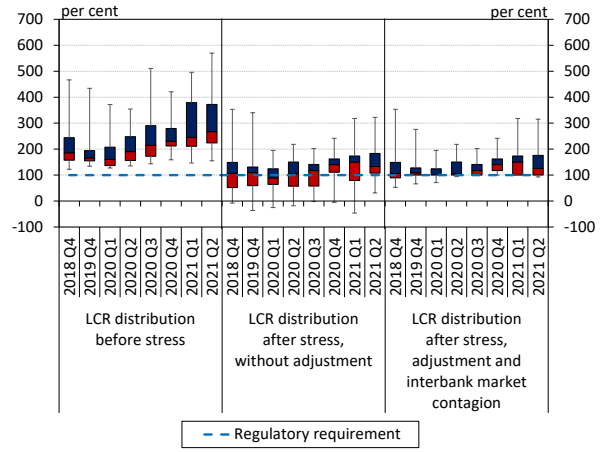
Assets			Liabilities		
Item	Degree	Currencies affected	Item	Degree	Currencies affected
Exchange rate shock on derivatives	15 per cent	FX	Withdrawals in household deposits	10 per cent	HUF/FX
Interest rate shock on interest rate sensitive items	300 basis points	HUF	Withdrawals in corporate deposits	15 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

[33] For a detailed description of the methodology, see Box 9 of the May 2016 MNB Financial Stability Report. In terms of its 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.

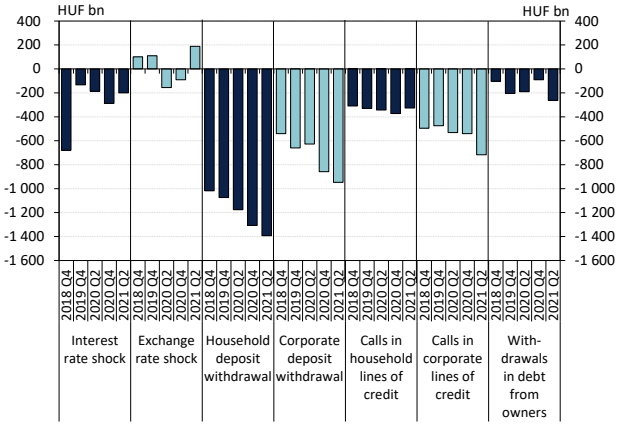
[34] The central bank's long-term collateralised loan facility and the expansion of the scope of collaterals, and the introduction of the one-week deposit.

Chart 74: Distribution of the LCR before and after stress, based on the number of banks



Note: The edges of the boxes represent the lower and upper quartiles of the distribution; the border of the colours represents its median. The lower whisker of the plot shows the tenth percentile, while the upper one shows the ninetieth percentile. Source: MNB

Chart 75: Aggregate impact of stress components

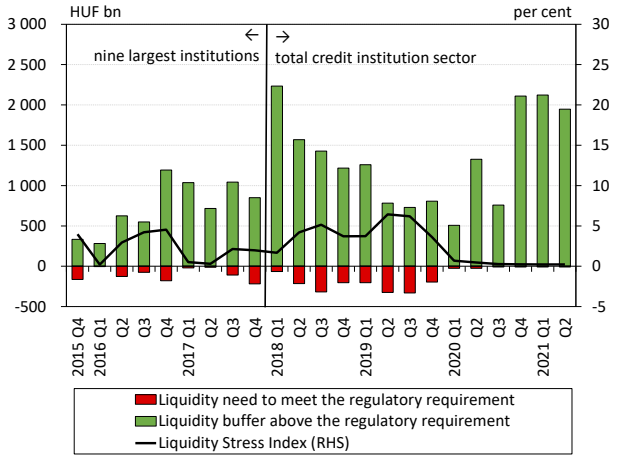


Note: The columns show the HUF billion change in the LCR's liquid assets at the banking sector level as a result of a given shock, adjusted for the change in net outflows. For calculating the impact of each shock we applied the assumption that the given shock occurs individually. Therefore, the sum of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

The LCR adequacy of the banking sector improved considerably in 2021 H1, and thus almost every institution would comply with the regulatory limit even in the case of a serious stress. The degree of pre-stress, initial LCR adequacies became even more favourable in 2021 H1 compared to previous periods, with the banking sector's median LCR reaching nearly 270 per cent by June 2021. Nevertheless, the dispersion of the indicator within the sector increased considerably (Chart 74). In 2021 H1, the degree of the shocks did not change significantly between individual periods. Thus, according to our estimates, banks' median stressed LCR in June 2021 amounts to 133 per cent, which does not represent any major change compared to the level of 140 per cent registered at end-2020. In spite of the slight decline in the median value, a moderate increase was observed in the lower part of the distribution, which comprises a small number of riskier institutions. Taking account of the adjustment opportunities and the liquidity-increasing impact of the set of monetary policy instruments revised in the spring of 2020, the dispersion of the LCR within the sector would narrow considerably, average adequacy would improve, and all institutions, with one exception, would meet the regulatory minimum requirement in both quarters of H1 even after a severe liquidity stress.

Of the sources of risk, banks' LCR indicators are most sensitive to shocks in deposit withdrawals, the impact of which increased further during the past half year, in line with the growth in deposits outstanding. Of the stress components, in addition to deposit shocks, the shock of household and corporate credit line drawdowns would also result in a significant impact (Chart 75). Interest rate shock and the shock from the withdrawal of owners' funds also have negative effects, but their significance is relatively moderate compared to other factors. 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 Q2.

Chart 76: The Liquidity Stress Index



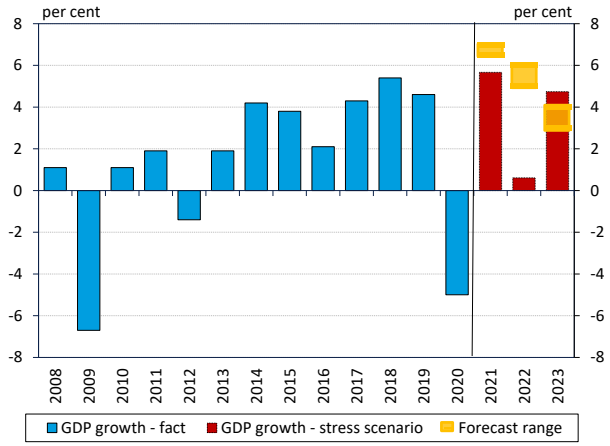
Note: The indicator is the sum of the liquidity shortfalls in percentage points (but a maximum of 100 percentage points) compared to the 100-per cent regulatory limit of the LCR, weighted by the balance sheet total in the stress scenario. The higher the value of the indicator, the greater the liquidity risk. Source: MNB

The Liquidity Stress Index remained close to its theoretical minimum at mid-2021. The Liquidity Stress Index, which was prepared in order to capture the heterogeneity across institutions, aggregates – weighting by banks' size – 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. The excess liquidity of the banking sector was around HUF 1,900–2,100 billion, while its liquidity need remained below HUF 10 billion (Chart 76). Government securities purchases by the central bank contribute to the increase in the banking sector's liquidity to a lesser degree in 2021. As a result of the MNB's July decision, the long-term collateralised lending facility can no longer be applied, while the allocation for the government securities purchase programme started to be reduced in August. Consequently, a relative decline in excess liquidity is expected over the long run.

8.2. The extension of the moratorium for a narrower range of customers does not jeopardise the sector's capital position

In the stress scenario, we examine the impact on capital adequacy of an economic slowdown, a weakening exchange rate and a rising interest rate level arising as a joint result of unfavourable shocks. We used the forecast of the September 2021 Inflation Report in the stress test baseline scenario. The results of our calculations reflect the development of the midpoint of the forecast range, while in the stress scenario, the impact of a simultaneous occurrence of various external and internal risks is presented. A considerable risk is posed by the rapid spread of new variants of the virus and the possible ensuing reintroduction of restrictive measures, which would entail negative impacts on the real economy, restraining economic growth both globally and in Hungary. Less favourable trends in employment and precautionary considerations would cause an overall decline in household consumption. In addition, due to the uncertain macroeconomic environment and lower demand for Hungarian exports, previously planned investment projects are postponed, resulting in weaker production capacity and economic activity. Due to strengthening risk aversion, capital outflows from emerging economies increase, leading to higher volatility in the financial

Chart 77: GDP growth rate in the scenarios



Source: MNB

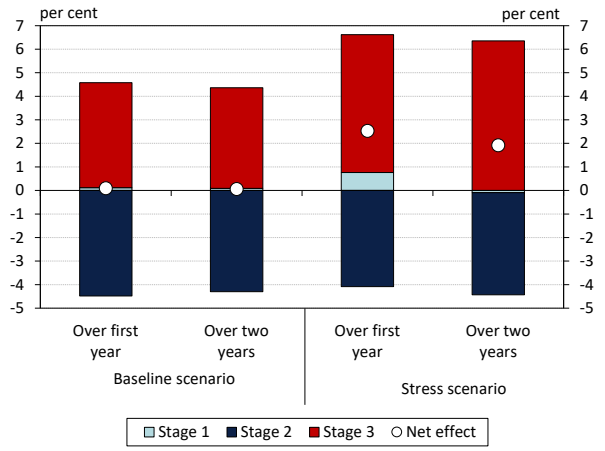
markets. Overall, the level of Hungarian GDP in the two-year stress scenario is 5–6 per cent lower compared to the baseline scenario, which is coupled with a weakening of the exchange rate and a sharp rise in the interest rate level (Chart 77).

In our credit risk models, we took into account the possibility of extending the loan moratorium until end-June 2022 and the tightening of the conditions for participation. In our loan loss calculations regarding loans to the private sector, we adjusted the amendments implemented since the May 2020 Financial Stability Report to the conditions of extending the moratorium. According to our assumptions, until end-October the suspension of loan repayment remains in place in the case of all the transactions that are in moratorium, but until end-June 2022 only those customers may participate in the extended moratorium who meet the conditions determined by the law.[35] The transaction-level classification was done in a way that the end-October, moratorium phase three participation rates available at the portfolio level after the opt-in period were filled with eligible loans that show the highest riskiness based on their probability of default estimated by our credit risk models. We quantified the impact of the deterioration in the macroeconomic environment in the stress scenario on the credit quality categories of the portfolio in moratorium using the transition probabilities capturing the underlying developments, which appeared in the banking books in a cumulative manner in 2021 Q4. In our calculations, we consider participation in the extended moratorium in itself as an indicator of a significant increase in credit risk (SICR). Accordingly, the probability of staying in either Stage 1 or Stage 2 is summed together in Stage 2 in 2021 Q4. According to our assumption, banks regularly review the credit risk of the transactions in moratorium during the extended moratorium and amend the risk classification of loans on a quarterly basis if necessary.[36]

[35] For more details see: https://magyarkozlony.hu/dokumentumok/a9347a39baa25ccf28fcdf58058cf0fcc67e5319/megtekintes

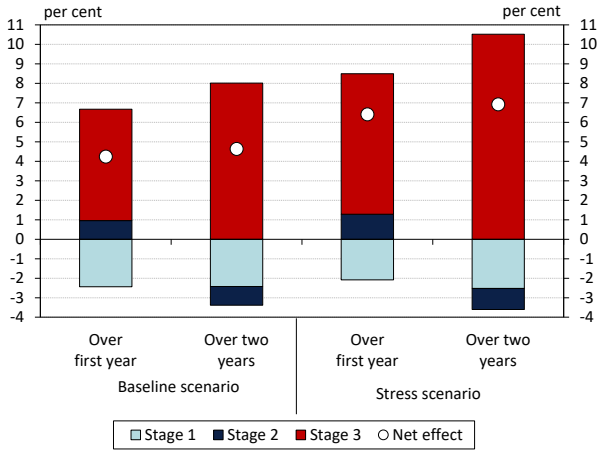
[36] For more details see: https://www.mnb.hu/letoltes/vezetoi-korlevel-az-ifrs-9-standard-alkalmazasaban-a-makrogazdasagi-informaciok-felhaszna-lasarol-es-a-hitelkockazat-jelentos-novekedeset-jelzo-tenyezokrol.pdf

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



Note: Net generated loan loss provisions, cumulated 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

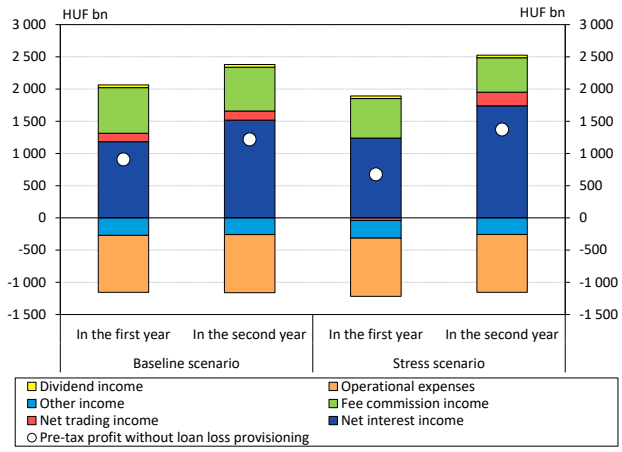
Chart 79: Cumulative loan loss provision rate for the household portfolio



Note: Net generated loan loss provisions, cumulated 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

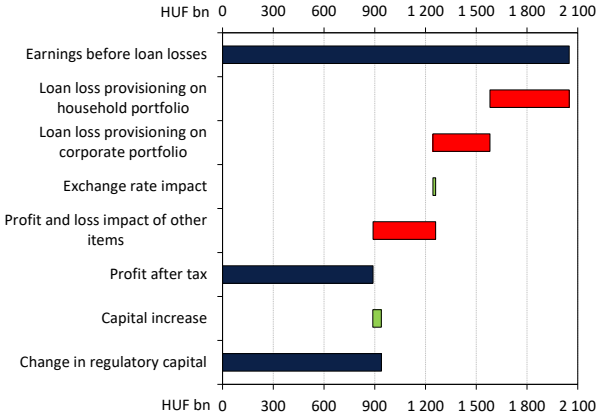
The loan loss categorisation results in significant loan loss provisioning, and the risk of future delinquencies also increases in the stress test. In addition to the risks arising with the end of the second phase of the moratorium, two factors substantially exacerbate loan loss provisioning in the two-year scenarios. Firstly, in the case of loans participating in moratorium phase three, which are thus characterised by a significant increase in credit risk, recovery to Stage 1 after June 2022 is limited in accordance with general regulatory requirements. Secondly, based on the assumptions of the stress testing framework, it is impossible to return from Stage 3 to any "performing" category. Furthermore, in line with the IFRS 9 rules, in the stress scenario, with the inclusion of the shock in the expectations, a major portion of the loan loss provisioning during the two years is already recognised at the beginning of the scenario. As a result of the deteriorating economic environment and the transition probabilities modified due to moratorium phase three, many transactions flow into the delinquent categories in 2021 Q4. Since the model does not allow recovery over the time horizon of the stress test, the cumulative volume of Stage 2 impairment (new impairment, inflows and outflows) shows a decline by the end of both the first and the second year. According to our estimates, in the two-year stress scenario, total additional loan loss provisioning would reach 2 per cent of the aggregate gross carrying amount in the case of the corporate portfolio (Chart 78) and 7 per cent in the case of the household portfolio (Chart 79). In addition, according to the forecast of our model, by the end of the second year the ratio of loans over 90 days past due to the gross loan portfolio would rise in the stress scenario to 15 per cent in the case of the banking sector's corporate portfolio and to 13 per cent in the case of the household portfolio.

Chart 80: Developments in items of earnings before loan losses



Source: MNB

Chart 81: Developments in certain items of the profit and loss statement in the stress scenario, for the banking sector



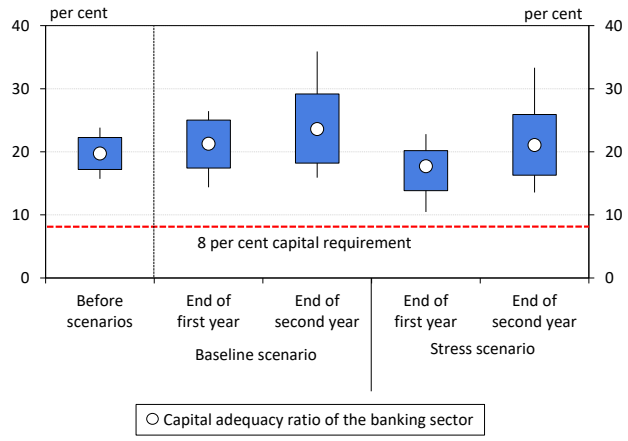
Note: Cumulated values over the two-year scenario. The profit and loss impact of other items consists of the following: NDIF, IPF and Resolution Fund fee, bank levy, capital needs of foreign subsidiaries and bank groups' tax expense. Source: MNB

Profit before loan losses remains significant in the stress scenario as well, in which the rise in the interest rate environment also plays a major role. In addition to the fact that the central bank interest rate hike and lending dynamics estimated for the next two years had a positive impact on the development of net interest income in both scenarios, compared to the baseline scenario the interest rate shock of the stress scenario raised the balance of the item by a further HUF 278 billion over the horizon under review (Chart 80). In contrast to the positive impact on interest income, with the occurrence of the interest rate shock, a significant one-off loss in trading income due to the revaluation of assets stated at fair value is recognised, which is partly offset by the convergence of bonds to their face value over the two-year horizon. In addition, the banking sector's profit estimated in the stress scenario is negatively affected by the HUF 240 billion lower fee and commission income, which is mainly attributable to the more subdued economic activity. As a result of the items listed, pre-tax profit before loan losses in the two-year stress scenario is HUF 80 billion lower compared to the level earned in the baseline scenario.[37]

The credit risk costs and other income components of the stress scenario significantly reduce the estimated profit of the sector. The banking sector's profit of HUF 2,050 billion before loan losses achieved in the two-year stress scenario is reduced by HUF 469 billion and HUF 338 billion by the additional demand for recognition of impairment of the household and corporate portfolios, respectively. In addition, banks' fee obligations (related to deposit insurance and resolution funds), the bank levy and other tax expenses have a negative effect of a further HUF 370 billion in total (Chart 81). In the end, however, we estimate that the sector's regulatory capital increases even in the two-year stress scenario, rising by some HUF 940 billion. At the same time, the distribution of the positive effect is heterogeneous at an institutional level and expressed in terms of the total risk exposure amount nearly 11 per cent of the sector is considered loss-making in the period under review, whereas in the baseline scenario this same value is around 1 per cent. It is worth noting, however, that some two thirds of banks suffer losses in the baseline scenario as well in the quarter burdened by the end of the general moratorium.

[37] According to our calculations, the forecast developments in the fee and commission income as well as in other income components are related to the changes in the balance sheet total. At the same time, as a result of the payment moratorium and the changed monetary policy tools, the balance sheet total of the banking sector has expanded significantly since the outbreak of the pandemic, which has not entailed any proportionate increase in these income components. Therefore, we approximated the growth in the balance sheet total used in our forecast by its expansion seen in 2019.

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



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

Table 5: Stress test results at various capital requirements

	8-per cent capital requirement				All capital requirements*			
	Baseline scenario 2022 Q2	Baseline scenario 2023 Q2	Stress scenario 2022 Q2	Stress scenario 2023 Q2	Baseline scenario 2022 Q2	Baseline scenario 2023 Q2	Stress scenario 2022 Q2	Stress scenario 2023 Q2
Capital need of banks (HUF bn)	0.0	0.0	0.0	0.0	0.0	0.0	21.4	1.4
Average capital need of banks** (percentage points)	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.5
Capital buffer of banks above requirement (HUF bn)	2 767	3 547	2 047	3 000	2 081	2 813	1 674	2 259

Note: *Capital requirements effective at the time of the publication. **RWA-weighted averages. Source: MNB

Capital need, which is estimated to be insignificant in spite of the serious stress, reflects strong shock-absorbing capacity. The 19.7-per cent average capital adequacy ratio, which marks the starting point and was calculated with the total H1 profit, declines to 17.7 per cent by the end of the first year of the stress scenario as a result of the losses recognised at the beginning of the period. The presumed shock would have an unfavourable impact on a wide range of banks. The capital adequacy ratio would fall significantly not only on average in the case of the stress scenario: much lower values are also seen compared to the ones observed in the baseline scenario when the institutional distribution is examined. Nevertheless, according to our calculations, by the end of the second year the capital adequacy ratio of the banking sector rises to around 21.1 per cent again (Chart 82). Due to the favourable results, all banks meet the Pillar 1 capital requirement at the end of the scenario, and even taking into account the overall capital requirements in place at the time of publishing the Report the resulting capital need would only amount to HUF 1.4 billion (Table 5). Based on the total risk exposure amount, this shortage would affect a mere 1.2 per cent of the sector, but banks need to prepare for meeting the suspended buffer requirements in the future.

LIST OF CHARTS

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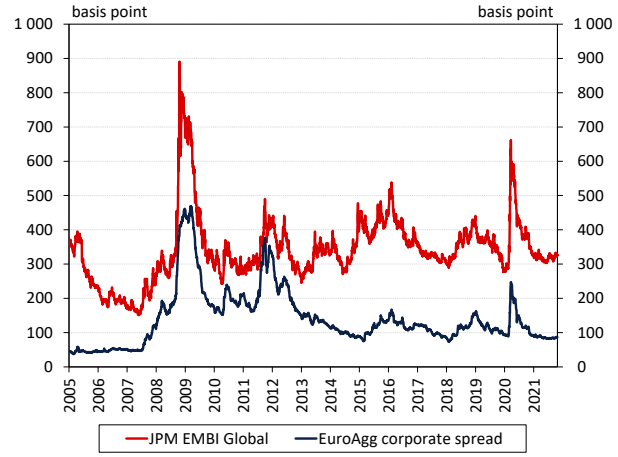
APPENDIX: MACROPRUDENTIAL INDICATORS

1. Risk appetite

Chart 1: Primary risk indicators



Source: Bloomberg

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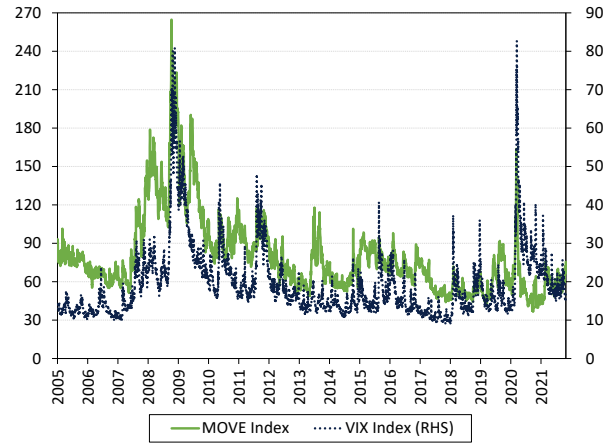

Source: Bloomberg

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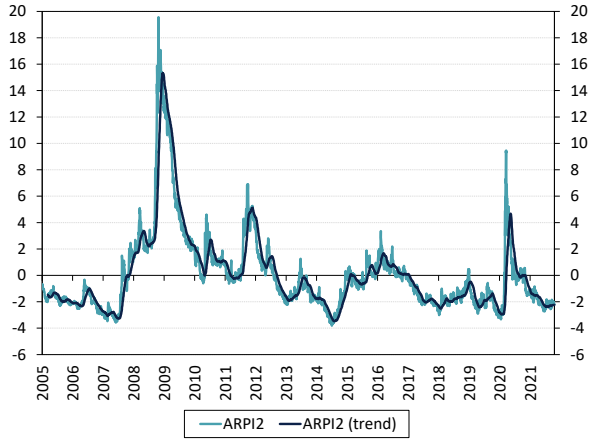

Source: DrKW

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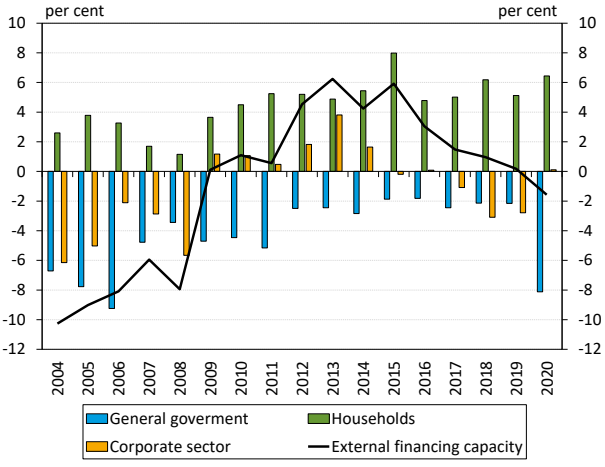

Source: MNB

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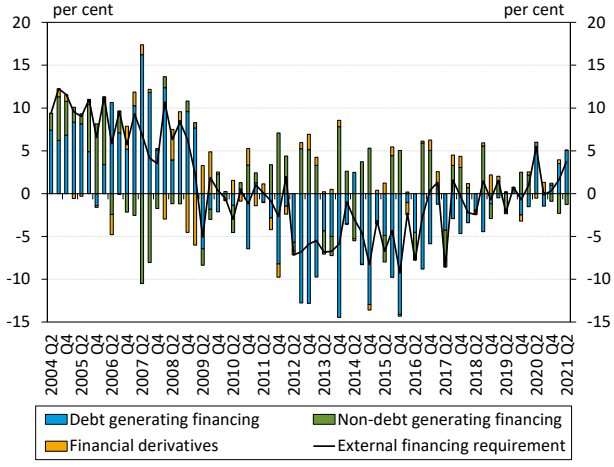

Source: MNB

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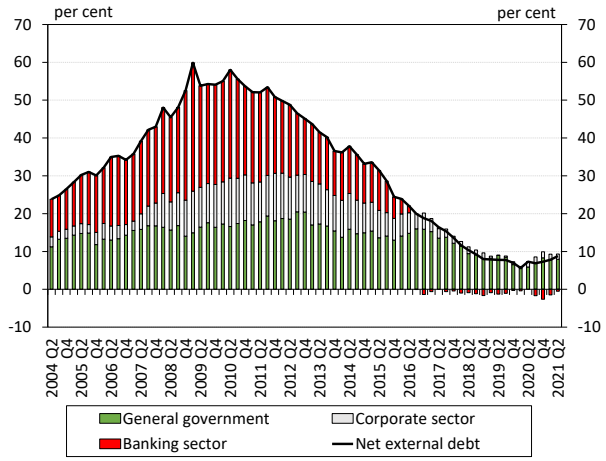

Source: MNB

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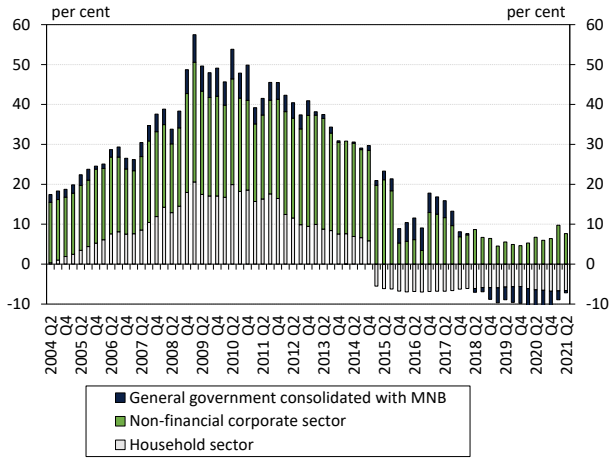

Source: MNB

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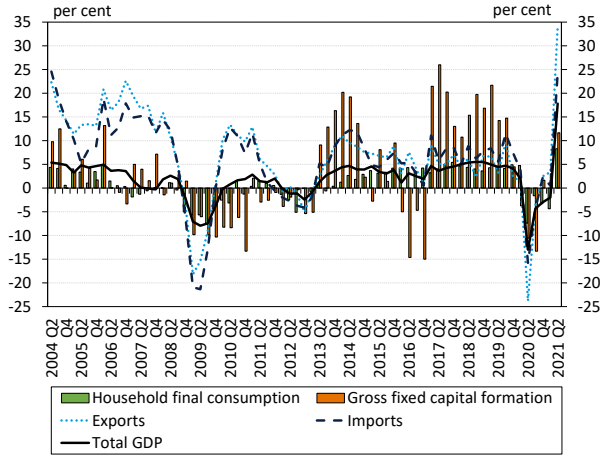

Source: HCSO

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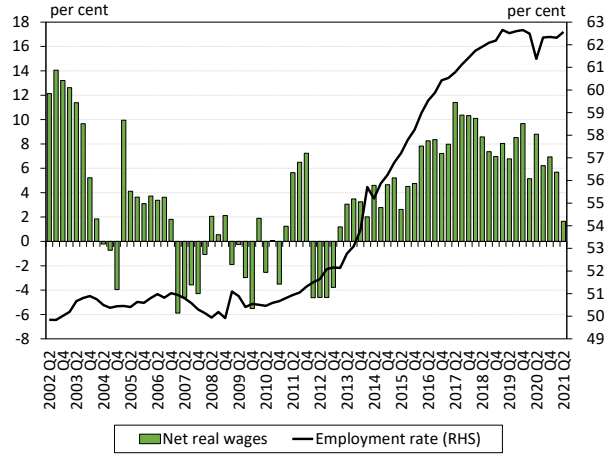

Source: HCSO

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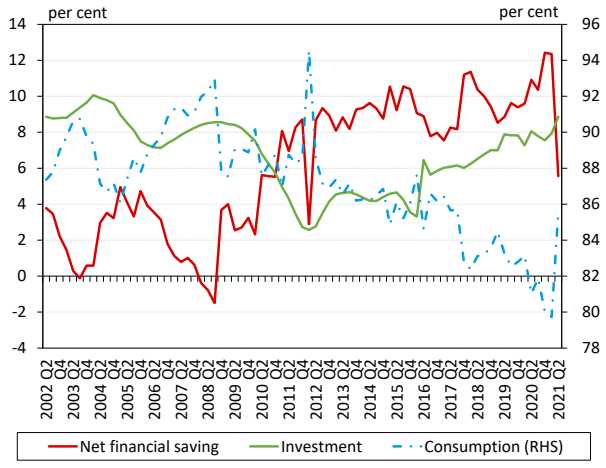

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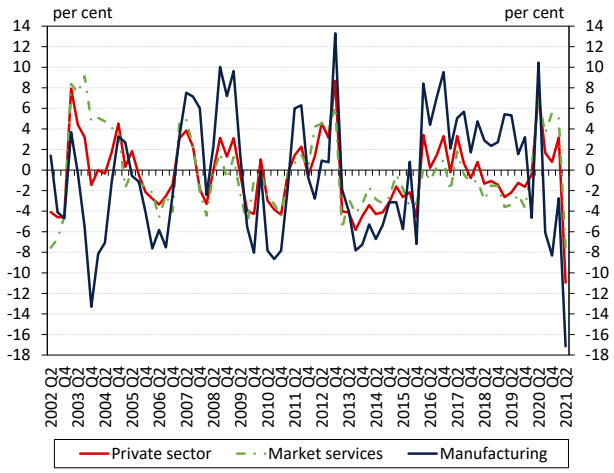

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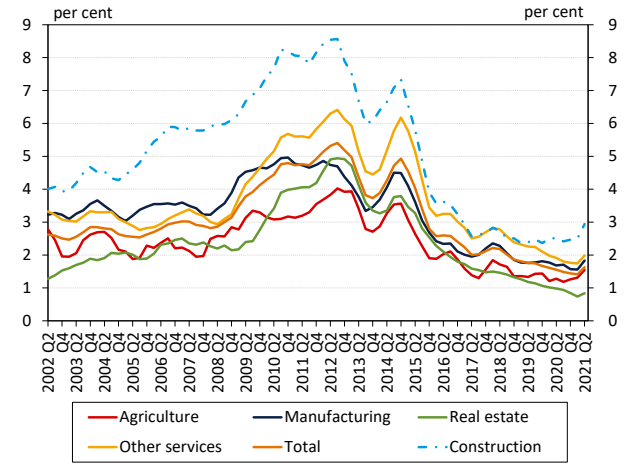

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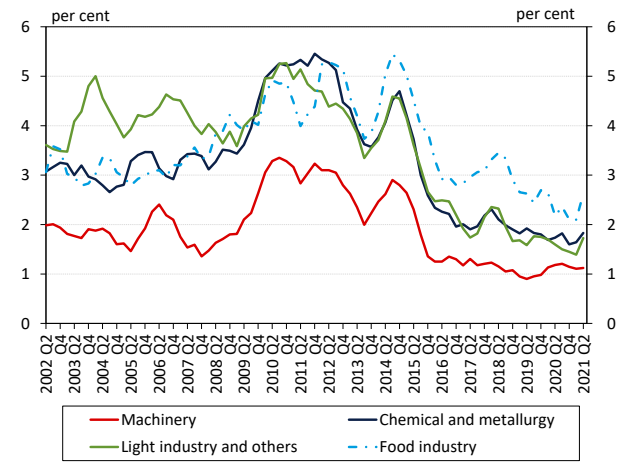

Source: Opten, MNB, HCSO

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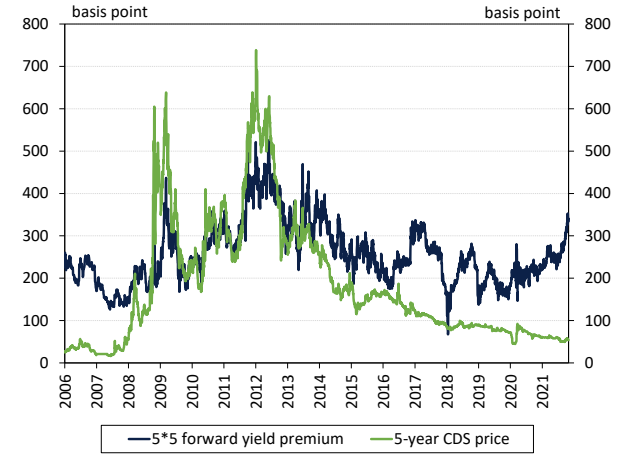

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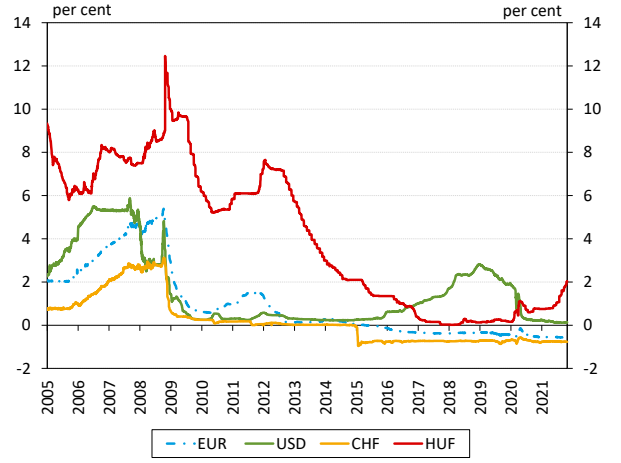

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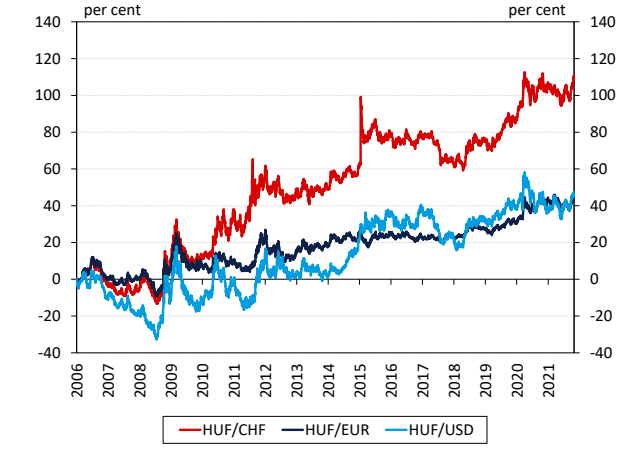

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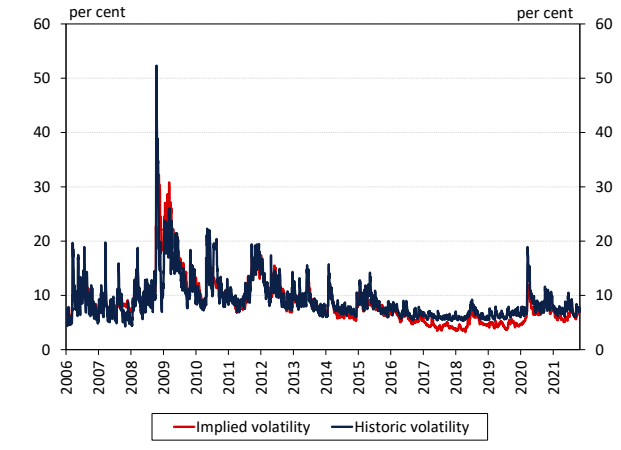

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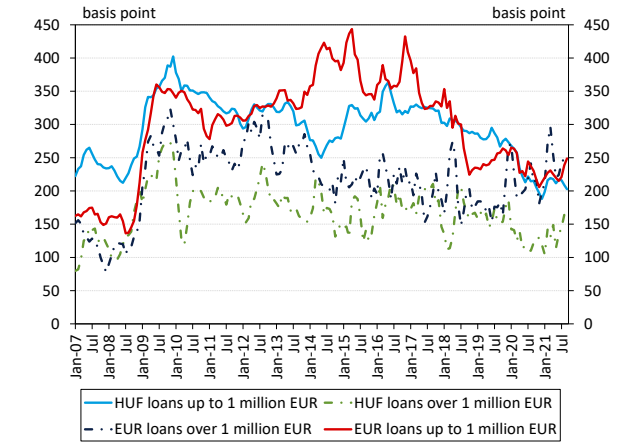

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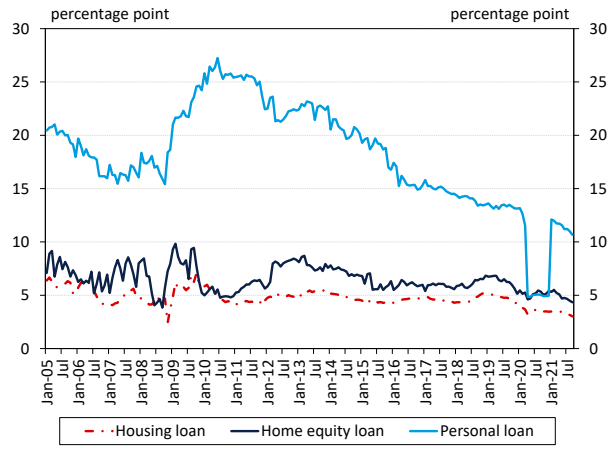

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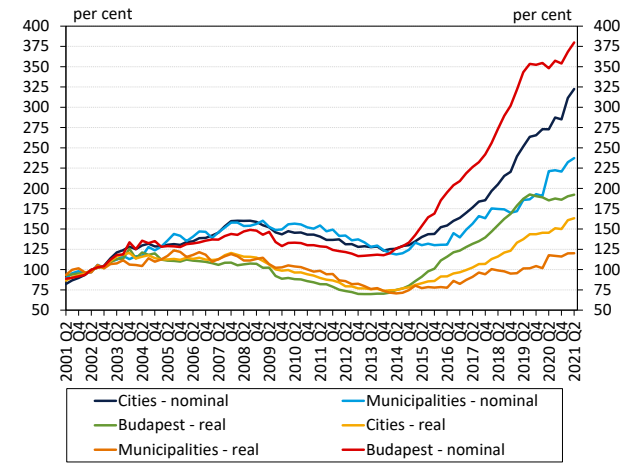

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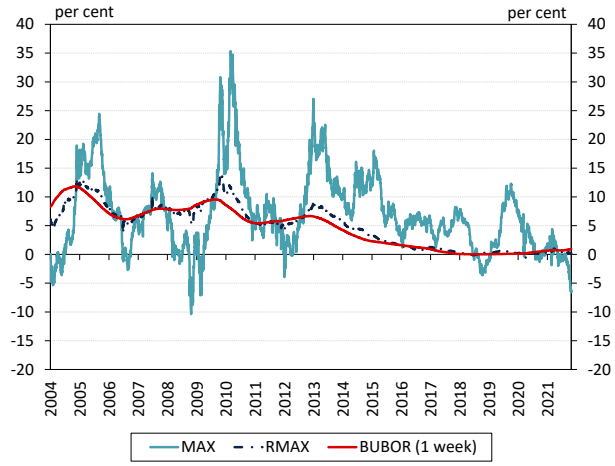

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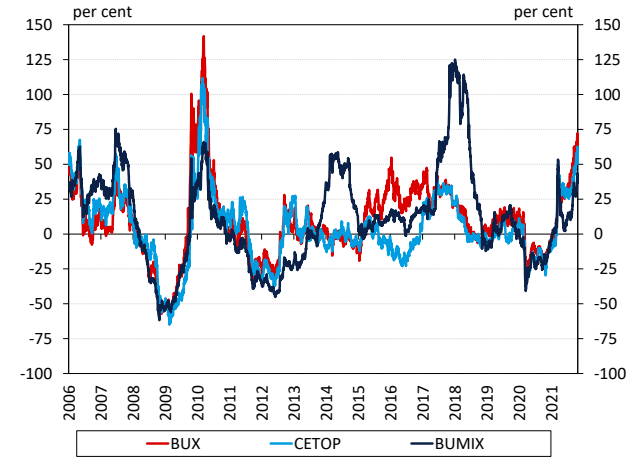

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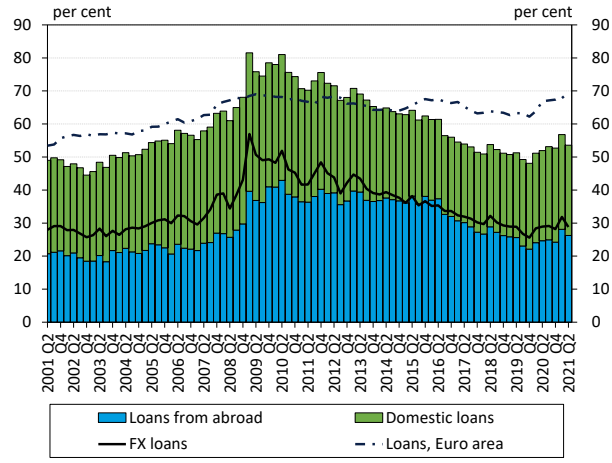

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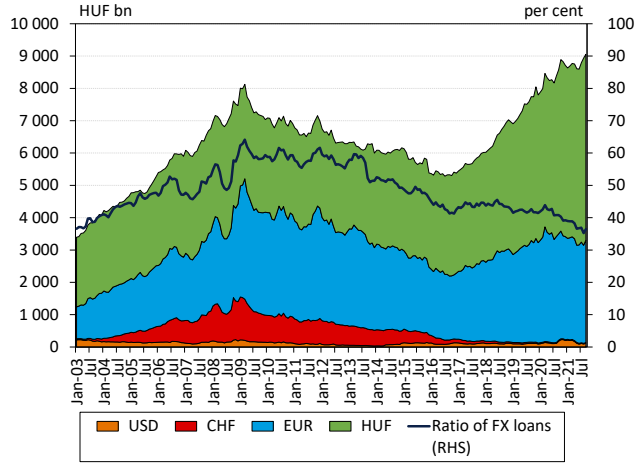

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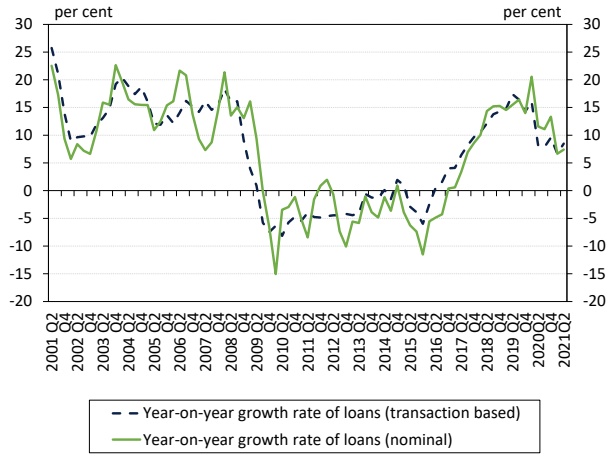

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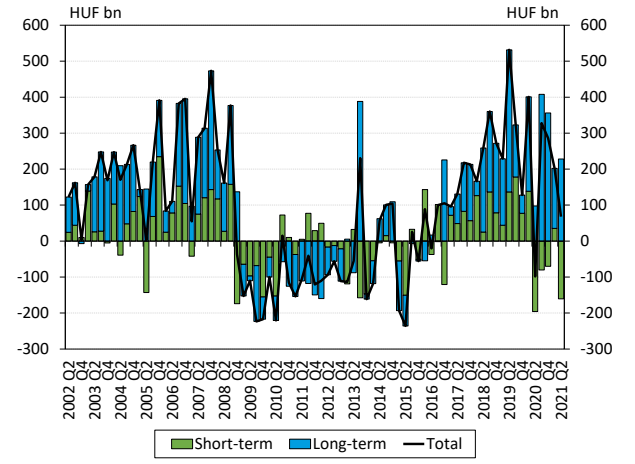

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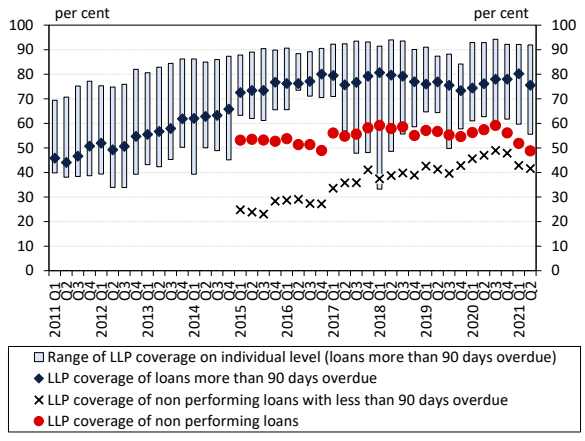

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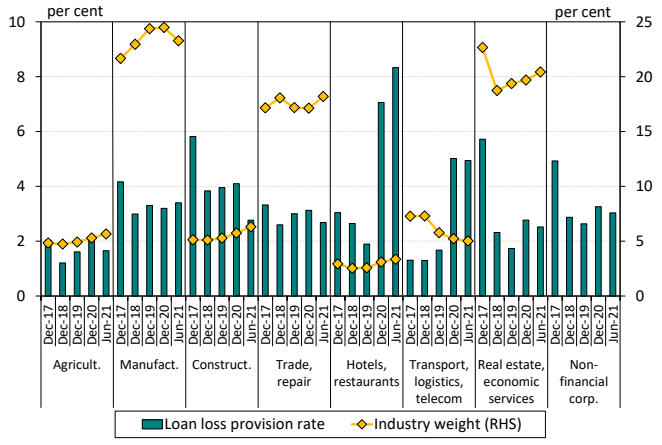

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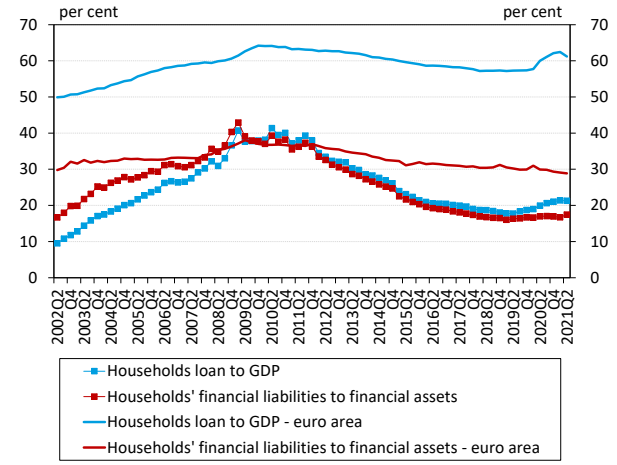

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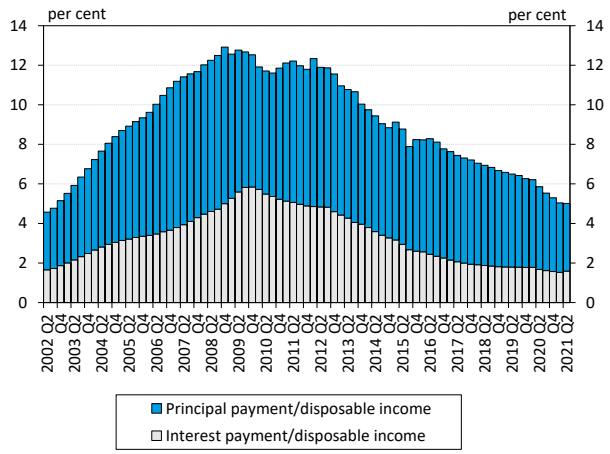

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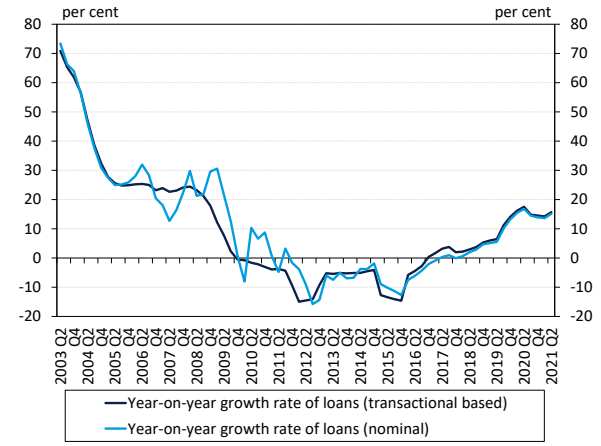

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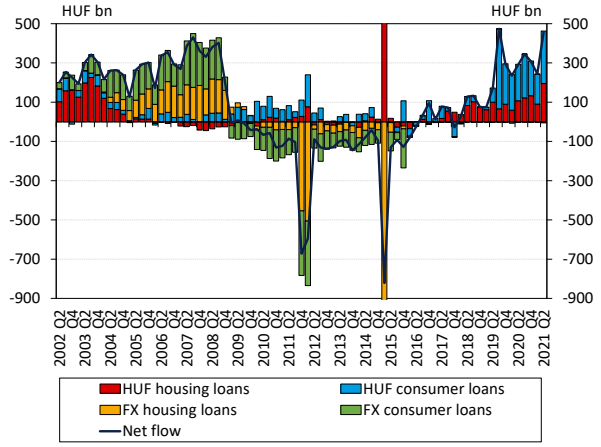

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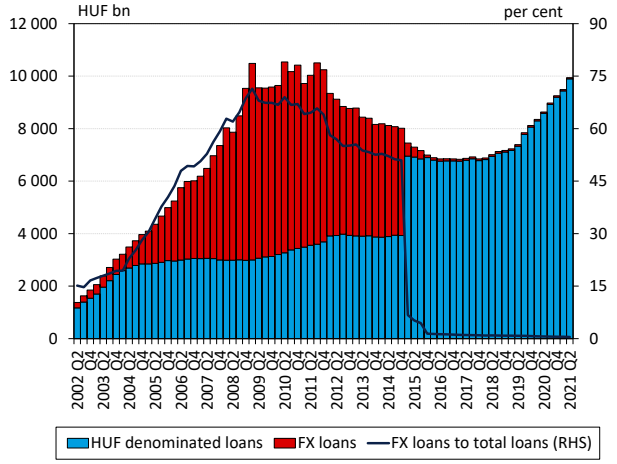

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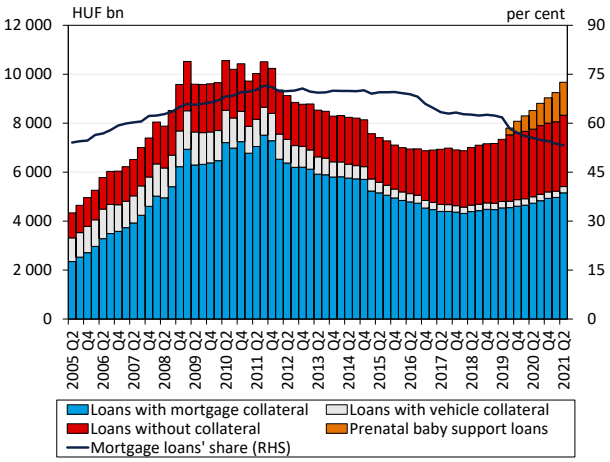

Source: MNB

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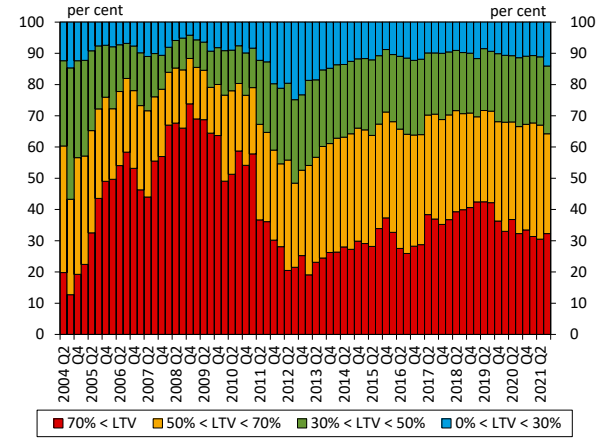

Source: MNB

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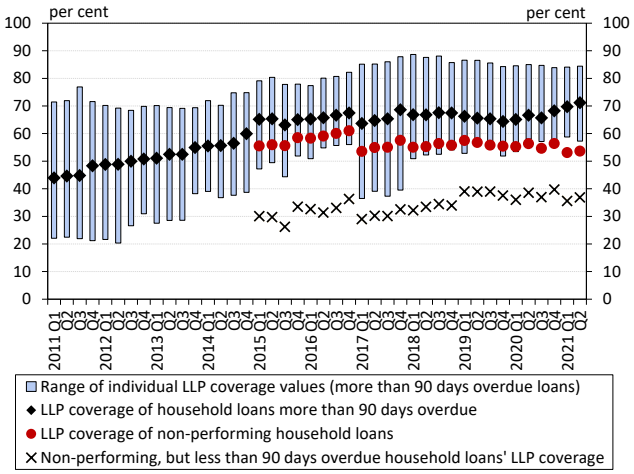

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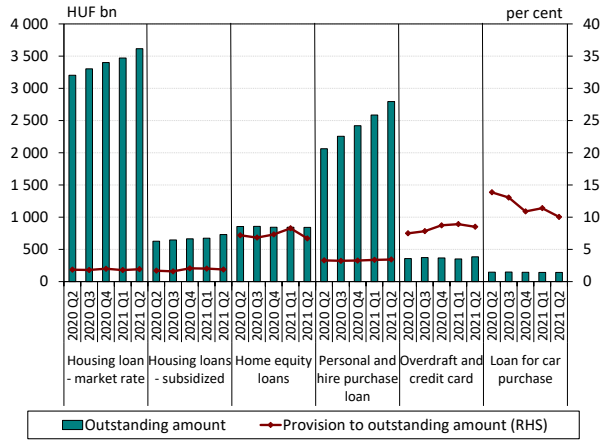

Source: MNB

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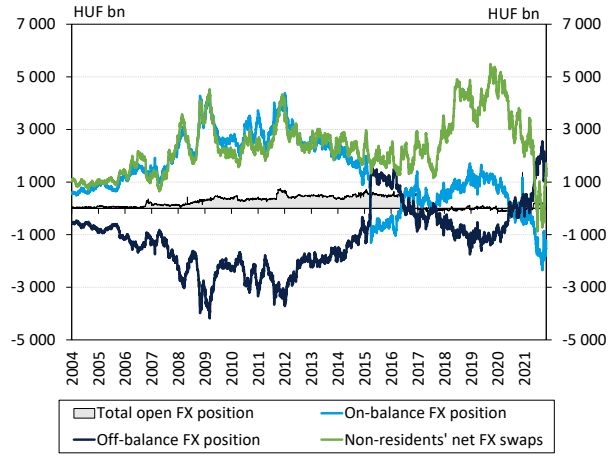

Source: MNB

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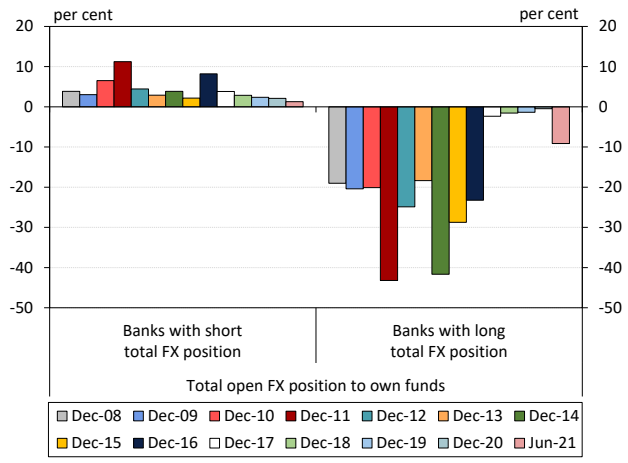

Source: MNB

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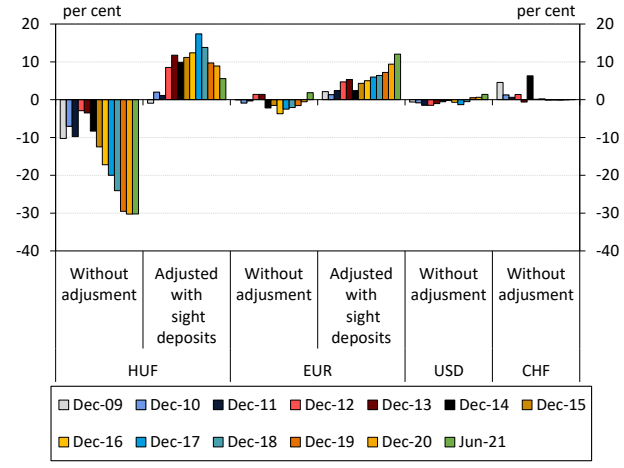

Source: MNB

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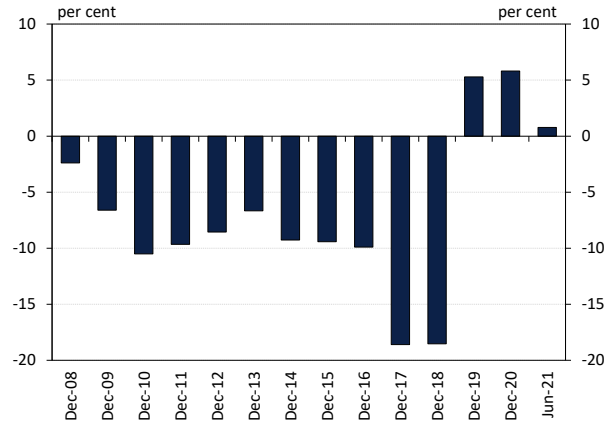

Source: MNB

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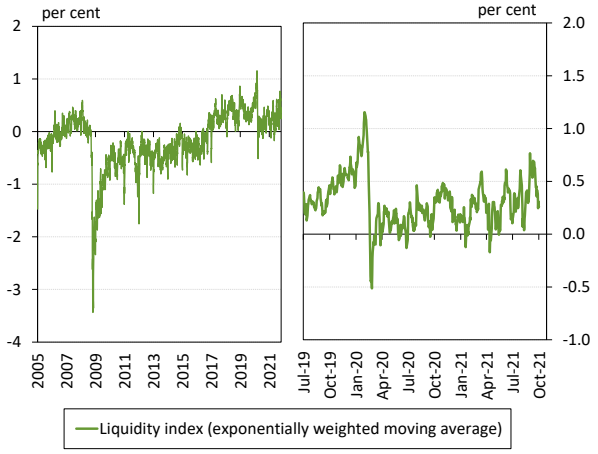

Source: MNB, KELER, Reuters, DrKW

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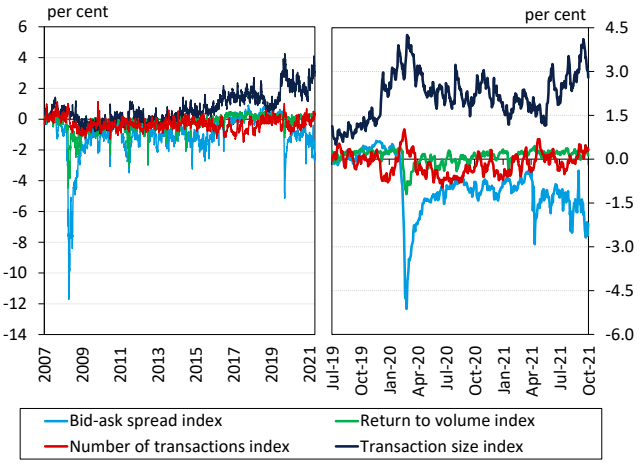

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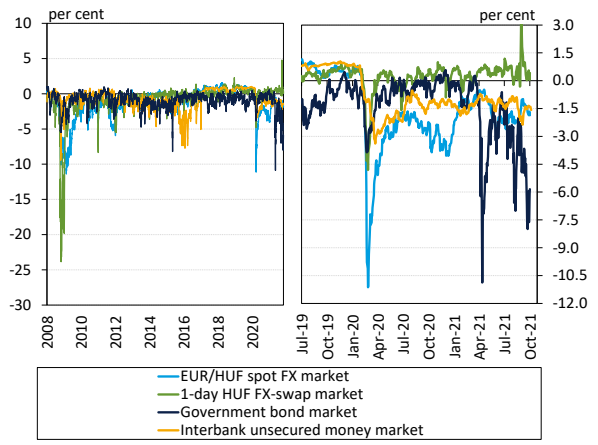

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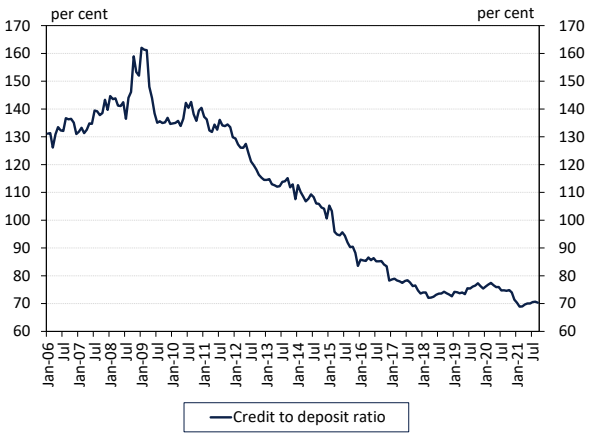
Chart 45: Credit to deposit ratio of the banking sector



Source: MNB

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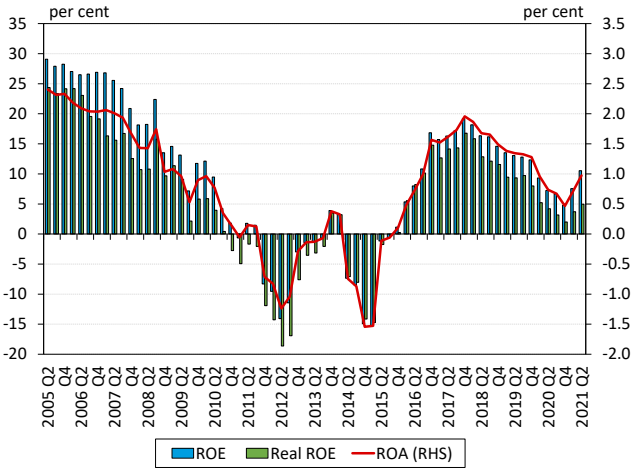

Source: MNB

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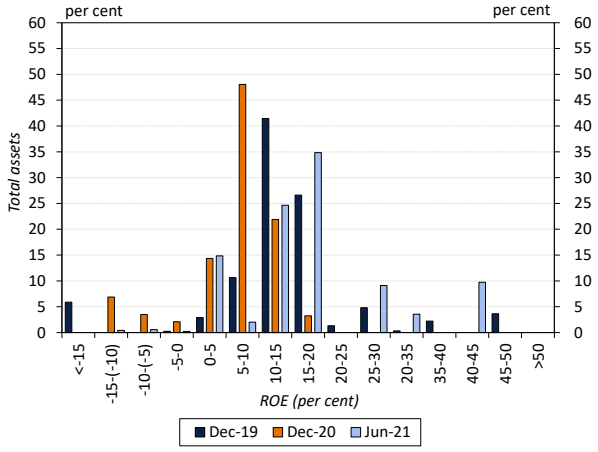

Source: MNB

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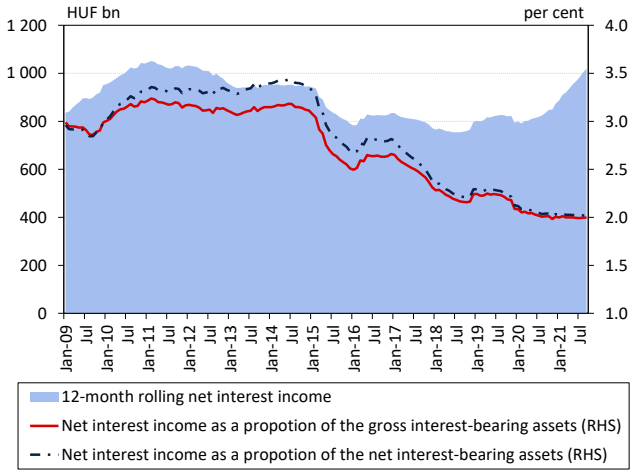

Source: MNB

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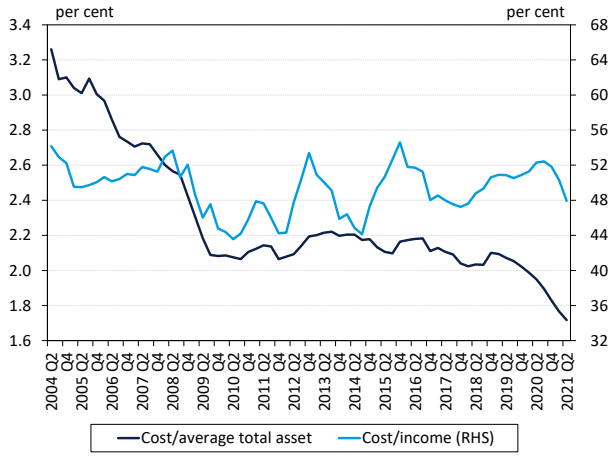

Source: MNB

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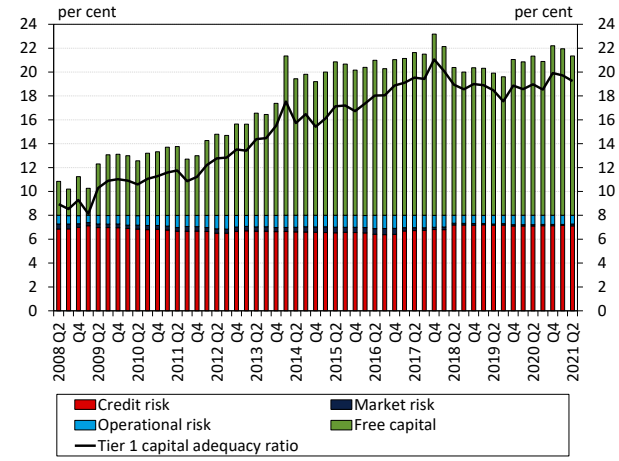

Source: MNB

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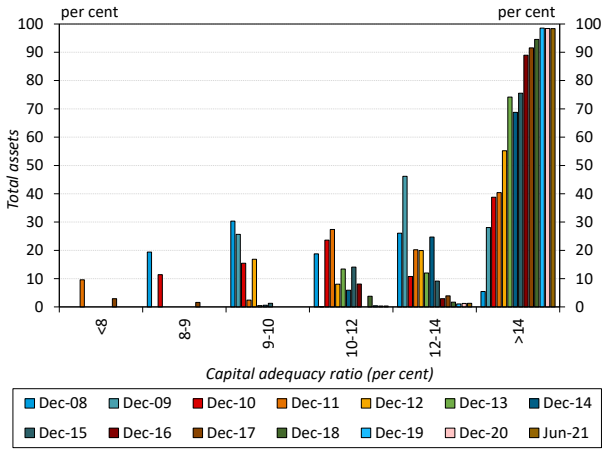
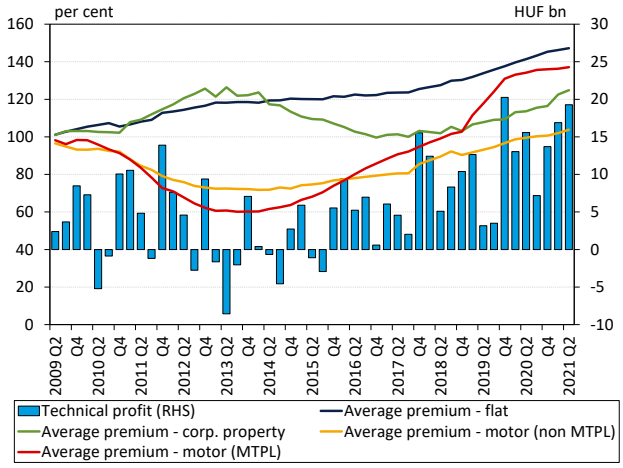


Source: MNB

7. Institutional investors

Chart 52: Underline data of insurance tax



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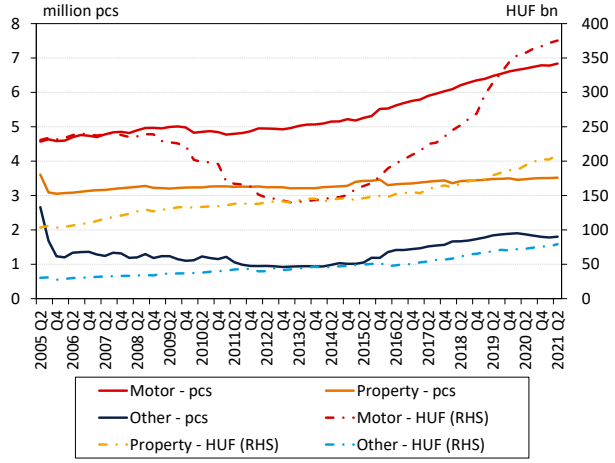

Source: MNB

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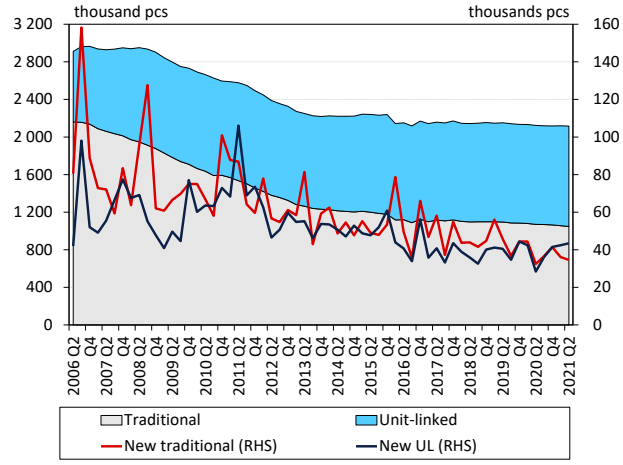
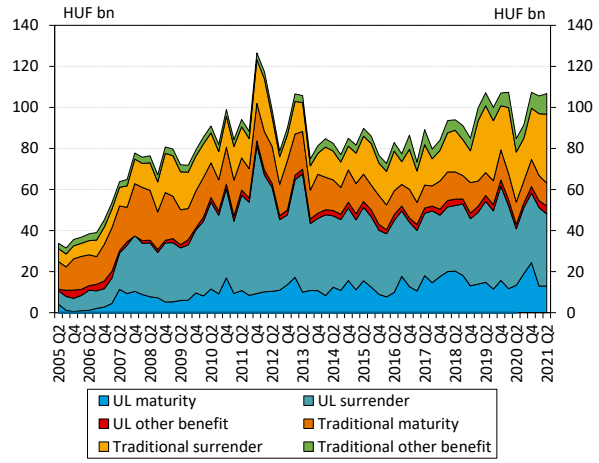


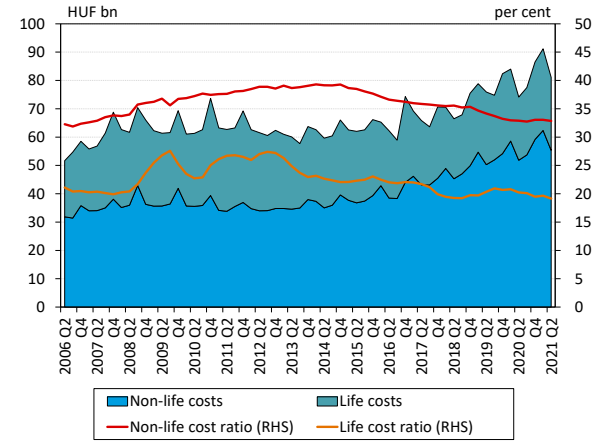
Source: MNB

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



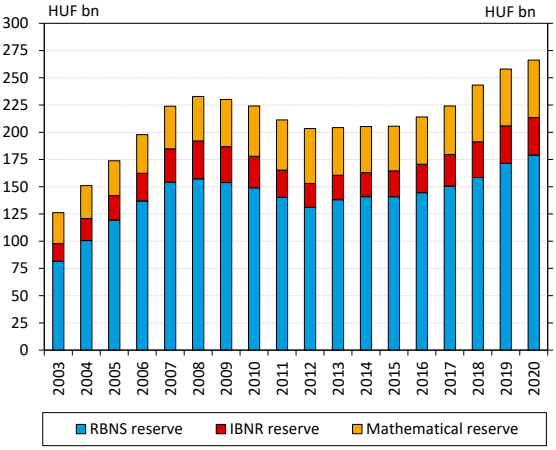
Source: MNB

Chart 56: Costs in the insurance sector



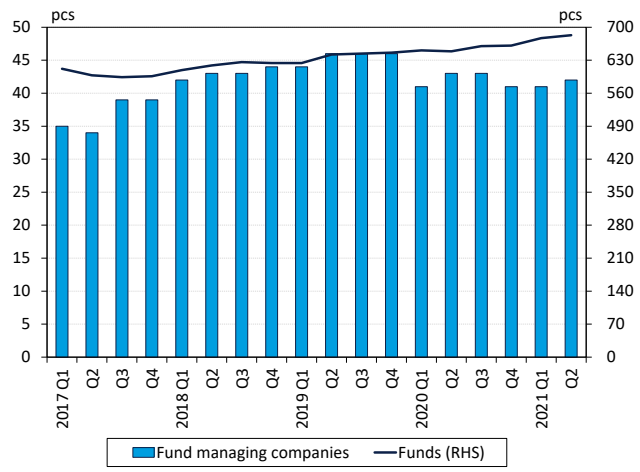
Source: MNB

Chart 57: Development of gross mtpl reserves



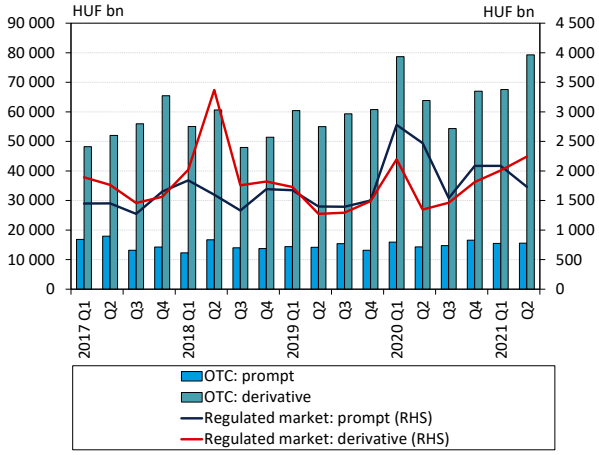
Source: MNB

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.

Chart 43:

Similarly to the liquidity index, an increase in liquidity sub-indices suggests an improvement in the given dimension of liquidity. The source of bid-ask spreads in case of HUF government bond market is calculated from the secondary market data transactions. The earlier version of the liquidity index included the CEBI bid-ask spread.

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.

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