

FINANCIAL STABILITY REPORT



2021 JUNE

`...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 16th April and 26th May 2021, and those of the Monetary Council following its meeting on 11th May 2021.

This Report is based on information in the period to 30th April 2021. Since data frequency is divergent through the analyses, the analysis horizons may also alter.

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Executive Summary

The shock-absorbing capacity of the Hungarian banking sector remains robust. In the second half of 2020, the sector's capital position strengthened further, while banks' liquidity continued to rise even from its previous high level. The banking system is characterised by a balanced funding structure even in the protracted pandemic situation. Owing to the sector's stable position, banks are able to provide corporations and households with the necessary funds, thereby supporting relaunch of the economy.

Global economic prospects continue to improve, as also reflected by inflation expectations. However, the recovery is surrounded by a number of uncertainties. Global economic prospects are gradually improving in parallel with rising vaccination rates, supported by the maintenance and expansion of economic stimulus measures. These factors have also contributed to a rise in long-term inflation expectations and consequently to higher yields in the developed economies, which may reduce risk appetite in the financial and capital markets. The higher yield environment may entail capital outflows and thus funding risks in the emerging regions. The pace of the recovery is surrounded by major uncertainties, primarily due to the low predictability of the future path of the pandemic. Due to the significant uncertainty about the speed of economic recovery, worries about future debt servicing also strengthened both in the public and private sectors.

Growth in domestic loans continues to be strongly supported by the central bank and government credit schemes and the moratorium on payments. In 2020, the outstanding borrowing of corporations and households rose by 9.4 per cent and 14.5 per cent, respectively, which may be deemed high even in a European Union comparison. This is largely attributable to the payments reducing effect of the moratorium. Owing to the moratorium, even those economic agents have access to funding that in the absence of the scheme would have not been eligible for loans due to the tightening of credit standards. According to our estimate, in the absence of the moratorium, credit growth in the corporate and household segment would be 0-3 per cent and 8 per cent, respectively. The favourable impact of the government and central bank schemes is also perceivable in the disbursement of new loans: in the second half of 2020, 34 per cent of new household loans were accompanied by state interest subsidy, while in the corporate segment almost 50 per cent of the disbursements were linked to the most dominant scheme, i.e. FGS Go!. Contrary to the period after the 2008 crisis, one favourable development is that banks perceive strong demand for investment loans as well at present. Furthermore, credit supply conditions were tightened only in a much narrower range and over a shorter horizon than during the previous crisis. According to our expectations, growth in the loan portfolio will persist even aside from the prolongation of the moratorium in July 2021: at the end of 2021, we expect an annual growth rate of 9 per cent in the corporate segment and around 11 per cent in the household segment. Then, by the end of 2022, credit dynamics in the corporate segment may be around 8 per cent, while for household loans it may gradually rise to 13 per cent.

Vulnerable borrowers participating in the moratorium hold 10-12 per cent of the entire loan portfolio, which represents a risk of manageable size for the banking sector. The ratio of the corporate loan portfolio participating in the moratorium fell significantly (to 39 per cent as a percentage of the eligible portfolio) by the end of 2020, while it did not change substantially for household debtors (54 per cent). The ratio of financially vulnerable debtors is higher among those participating in the moratorium. According to our estimate, roughly 12 per cent of the corporate loan portfolio, based on participation in the moratorium, the debtor's activity and financial situation. On the other hand, the effect of credit risks on banks and on the overall macro economy is mitigated by the fact that the indebtedness of corporations and households to banks as a percentage of GDP is low, both by international standards and compared to the previous crisis period, and that the MNB supports prudent lending via its set of macroprudential instruments.

Rising credit risks were also reflected by the significant growth in impairment recognised by banks. In 2020, the ratio of the banking sector's non-performing loan portfolio fell to a historic low. However, at present the non-performing ratios do not provide a full picture of the quality and risk level of the loan portfolio, as the moratorium on payments prevents debtors from defaulting on their debts to banks. At the same time, increasing risks are reflected by the rise in

the ratio of loans within the portfolio which are allocated to the Stage 2 IFRS 9 accounting category, signalling major growth in credit risk, and by the rise in impairment coverage. In the case of loans participating in the moratorium, Stage reclassifications occurred to a larger degree, and the increase in average impairment coverage was also more significant among them. In 2020, Hungarian banks recognised impairment of roughly HUF 260 billion, which corresponds to 0.5 per cent of the assets and may be regarded as prudent provisioning also by European Union standards.

In terms of the value of bank collaterals, real estate market trends may represent a risk, particularly in the case of commercial real estate financing loans. Demand on the housing market picked up significantly in early 2021, partly as a result of the housing subsidy for family schemes. The favourable financing and subsidy environment may materially boost the housing market, while there is no sign of overheated lending yet, and major growth may be expected also in housing market supply as a result of the re-introduced preferential VAT on housing in the medium run. On the other hand, in the office, retail and hotel segment, the risk of falling property prices was exacerbated by weaker demand and investors' rising yield expectations in 2020. The key risk factor on the commercial real estate market is that while future demand in the office and hotel segment is surrounded by major uncertainty due to the protracted pandemic situation, large-scale property developments are currently underway in these markets. However, the banking sector's exposure to the property market is substantially lower compared to the previous crisis, which strongly reduces the risks arising from the sector.

Due to the rising risk costs, profitability has deteriorated significantly. Nevertheless, the banking sector's capital position strengthened further. Based on non-consolidated data, the credit institution sector's profit after tax was HUF 206 billion in 2020, representing a drop of almost 60 per cent in annual comparison. The annual return on equity fell to a five-year low, i.e. to 4.4 per cent. Nevertheless, institutions closing the year with a profit account for more than 78 per cent of the sector, based on the balance sheet total. In 2021, due to the deterioration in risk rating (in accordance with the regulatory requirements) of loans participating in the moratorium for more than 9 months the sector's profitability may decline further. However, the capital position of the banks is robust. In the second half of 2020, capital adequacy was improved both by the positive results and regulatory easing. Accordingly, the banking sector's consolidated capital adequacy ratio rose to 18.3 per cent by the end of the year. Considering the release of the buffer requirements, the free capital of the sector amounts to HUF 2,110 billion (7.4 per cent of the risk exposure value) and calculating with the total annual profit, the free capital of all groups and individual institutions as a percentage of exposure exceeds 4 per cent.

In our stress test exercise, calculations include payment moratorium until June 2021, in accordance with the legal framework in force at the time of the preparation. Based on our stress test result, almost all institutions in the domestic banking sector 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. The prolongation of the moratorium after June 2021 could modify the estimation results in merit, however, it is not possible to quantify this effect accurately at the time of writing this report due to the lack of legislation containing detailed rules.

As a result of the wide-ranging payment moratorium on loan repayments, which was introduced in March 2020, additional liquidity amounting to some HUF 1700 billion was made available for actors in the private sector in 2020. However, the risks may exceed the advantages of the programme to date in parallel with the economic recovery and the increase in the vaccination coverage rate. Maintaining the moratorium in the current, wide-ranging form would lead to the increase of consumer protection risks as well as bank credit risks, while a possible narrowing in banks' lending capacity could decelerate the pace of recovery. Accordingly, when extending the payment moratorium, the Magyar Nemzeti Bank considers it extremely important that the majority of the debtors currently participating in the programme restart the repayment of their respective loans, and only those should take the opportunity offered by the extension of the programme who really need the backstop provided by the moratorium.

1 International environment: improved outlooks, but the recovery is surrounded by uncertainties

The global economic outlook improved as a result of the start of mass vaccinations and economic recovery programmes, but the course of the recovery is still surrounded by risks. As a result of the positive developments related to the upswing, long-term inflation expectations increased. Nevertheless, a shift towards monetary tightening is not yet expected on the part of the ECB and the Fed. In relation to the abundant global liquidity and low interest rate environment, risk appetite increased in the capital and bond markets in 2020, but the rise in developed market bond yields observed in 2021 may reduce the relative attraction of riskier assets.

As a result of fiscal measures, the indebtedness of economies increased considerably in 2020. Nevertheless, developed economies may be characterised by supportive fiscal policies in 2021 as well. Subsidies provided support to the income position of the actors of the real economy, and thus the number of unemployed increased to a lesser degree during the pandemic in Europe than at the peak of the global financial crisis. Nevertheless, the financial situation of those belonging to the lower part of the income distribution was more strongly affected by the restrictions, and thus the pandemic may have increased social inequalities. Programmes aiming to improve firms' liquidity position have helped prevent an increase in the number of bankruptcies so far, but looking ahead many businesses may drift towards insolvency.

In connection with expectations related to the deterioration in portfolio quality, the share of Stage 2 loans in European banking sectors rose considerably. In parallel with that, forward-looking loan loss provisioning increased as well. European banks' return on equity declined further in 2020, with contributions from an increase in risk costs and a decrease in operating income. The fact that an increasing number of banks expect a deterioration in asset quality in all segments indicates risks in terms of portfolio quality. These challenges can also be observed in the major deterioration in banks' market valuation.



Chart 1: IMF forecasts for changes in real GDP

1.1 Differences may arise in the recovery of economies depending on the management of the pandemic

The global economic outlook improved, but the degree and path of the recovery are surrounded by many risks. The global economic outlook improved considerably as a result of fiscal and central bank monetary measures to stimulate the economy and in view of the start of mass vaccinations (Chart 1). In connection with that, in April 2021 the IMF raised its forecast for global real GDP growth in 2021 to 6 per cent. In 2021, India's economy is expected to grow to the greatest degree, by some 12.5 per cent, followed by China and the USA with expansions of 8.4 per cent and 6.4 per cent, respectively. Economic growth in the euro area is expected to reach 4.4 per cent. Nevertheless, the forecast has higher uncertainty than usual: the degree of recovery mostly depends on the economic policy stance of the developed economies, the speed of vaccine allocation and reaching community immunity, as well as on the date of lifting the restrictions. The latter is especially uncertain due to the spread of the new virus mutations





Source: IMF WEO

Chart 3: Inflation expectations in the Eurozone and the United States



Note: Inflation expectations implied by the difference between the 10year government bond yields and inflation indexed government bond yields. Source: Datastream, FRED

appearing at end-2020, which overloaded healthcare capacities in many countries in the first quarter of 2021.

Of the most developed countries, only the US economy may exceed its pre-pandemic output this year. Despite the positive expectations, similarly to the downturn in 2020, the degree of recovery may also vary from country to country (Chart 2). According to an estimate by the IMF, of the most developed countries only the performance of the US economy may exceed the 2019 output level this year, mainly due to the major fiscal stimulus and improvement in pandemic indicators. Of the largest developing economies, output in China, Turkey and India may exceed the prepandemic levels in 2021, by 10.9, 7.9 and 3.6 per cent, respectively. Repeated tightening of the containment measures and the smaller fiscal support may result in a more moderate recovery in most euro area countries. In addition, the European Mediterranean countries hardest hit by the downturn in international tourism may only reach their pre-pandemic economic performance by end-2023.

Inflation expectations increased around the world owing to positive signs of a global economic upswing. Inflation expectations rose in the euro area and the USA, due to positive developments in vaccinations against the coronavirus as well as significant monetary and fiscal stimulus measures (Chart 3). Satisfying the surge in the demand for certain products (e.g. due to the global shortage in chips and containers) may generate a further inflationary effect in the short run. Nevertheless, in their previous communications, both the ECB and the Fed confirmed that for the time being they are not planning to tighten their respective monetary policy stances. Market participants expect the first interest rate hike from the Fed and the ECB at end-2022 and early 2023, respectively. In view of the positive developments related to economic recovery, longterm inflation expectations calculated from market pricing also rose in the past period: since bottoming out in March 2020, inflation expectations calculated from government bond yields increased by 1.1-1.4 percentage points in the largest economies of the euro area and to an even greater degree, by 1.9 percentage points, in the USA in the course of one year.

In view of the ample global liquidity, developments in the capital markets and the real economy diverged. The expansion in liquidity as a result of the steps to stimulate the economy to offset the economic consequences of the coronavirus pandemic, and the low interest rate environment, which is has lasted longer than previously expected, channelled investors towards the market of



Chart 4: The consumer confidence index, the total assets of the Fed and selected US stock indices



Chart 5: Evolution of emerging market capital flows and 10-year US yields



Source: EPFR, Datastream

riskier assets. One of the consequences of the search for yield observed in the financial markets is that leading stock market indices have risen considerably since hitting their lows in March of last year. The three largest US stock indices advanced to new peaks, and their price/earnings (P/E) ratios are also well above their respective historical averages, in connection with which several market participants call attention to the risk of asset overvaluation. The divergence of capital market and real economic developments is indicated by the fact that the consumer confidence indicator, which reflects households' expectations, has remained below the pre-pandemic level in the past year (Chart 4). Looking ahead, the globally observed rise in bond market yields may reduce the relative attraction of equities, leading to repricing risk in the equity markets.

The rise in developed market yields reversed the trends in emerging market capital flows. Following the initial shock caused by the coronavirus pandemic, emerging market bond funds were characterised by stable capital inflows from May 2020. In early 2021, however, investors started to focus on reflation¹ risks, which resulted in an increase in developed market government bond yields. In line with that, a major capital withdrawal was observed in most emerging bond markets between mid-February and mid-March (Chart 5). Developed market bond yields remained low in a historical comparison, but at the same time a further rise in yields may result in significant turbulences in emerging markets. Nevertheless, risks related to capital flows are mitigated by the latest Fed communication suggesting that no reduction of the quantity of bond purchases is expected for the time being. Accordingly, the probability of the recurrence of emerging market turbulences experienced in 2013, as a result of taper tantrum, is low at present.



Chart 6: Gross government debt and fiscal balance relative to GDP

Note: The right axis is inverted. Source: IMF WEO

1.2 State subsidies and central bank programmes help the financial situation of the private sector

Supportive fiscal policy may continue to be typical in developed economies this year. In view of the economic downturn and supportive fiscal measures, the indebtedness of sovereigns as a percentage of GDP increased considerably in 2020 (Chart 6). Despite the higher debt burdens, several developed economies are maintaining their supportive fiscal policy stances this year: the USA and Japan adopted significant stimulus measures, and the European Union also announced its recovery package of some EUR 750 billion (Next Generation EU). In developed economies, on aggregate the general government deficit estimated for this year may come close to the level of 11.7 per cent of GDP measured in 2020. Despite the elevated debt levels, in view of the globally low interest rate environment, the interest burden on the issued debt remained at manageable levels in most of the economies. At the same time, as a result of the still supportive fiscal policy, governments' gross borrowing needs may increase considerably in most economies by end-2021 (Box 1).

BOX 1: INTERNATIONAL OVERVIEW OF THE FISCAL AND MONETARY POLICY MEASURES INTRODUCED DURING THE PANDEMIC

More than a year has elapsed since the appearance of the coronavirus pandemic. During this period, governments and central banks have constantly had to take measures to address the ongoing public health crisis and adverse economic effects of the pandemic. One common feature of international economic policies in the past period was that they sought to mitigate the unfavourable effects of the pandemic in a more active manner and by launching programmes with larger volumes than in previous crises. Accordingly, fiscal and monetary policy steps and macroprudential measures were taken.² The latest forecasts by international institutions and think tanks already show an improvement in the pandemic situation and thus a gradual recovery of economies for this year, but a number of countries may still be characterised by expansive fiscal and monetary policy stances in the coming period, which may determine global economic and financial trends in the longer run as well.

During the past year, the fiscal measures taken since the outbreak of the pandemic supported the economies by an amount corresponding to 19 per cent of global economic output,³ significantly reducing the difficulties of distressed households and enterprises. Due to fiscal stimulus measures and a simultaneous decline in government revenues, debt indicators surged in most countries. Typical fiscal measures include wage support, one-off cash allowances, extension of unemployment benefits, deferred tax payments, capital injection and preferential loan and guarantee programmes.⁴ By end-2020, the budget deficit-to-GDP ratio rose to an average of 12 per cent in developed economies

¹ The price increase occurring as a result of stimulating economic activity through fiscal and monetary policies following recession, indicating a price increase from a deflationary or close-to-zero inflation environment.

² For details on the measures announced upon the outbreak of the pandemic see Box 2 of the May 2020 Financial Stability Report.

³ From the outbreak of the pandemic until 17 March 2021, as a percentage of 2020 global GDP. Based on the estimate of the IMF.

⁴ This listing is not complete, see the <u>IMF policy tracker</u> for details on these measures. Part of these measures do not generate immediate burden for the government budget; the data in the chart are estimates by the IMF.

and to 10 per cent in emerging economies. In addition, the government debt-to-GDP ratio also increased, rising by an average 10 percentage points to 64 per cent in the emerging economies and by 16 percentage points to 120 per cent in the advanced economies compared to the previous year. The interest burden on the debt issued remained at a manageable level due to the low interest rate environment, but by end-2021 the gross government borrowing needs may increase significantly in the majority of economies. According to the forecast of the IMF, over the medium term, with the end of the previous state programmes, the pressure on budgets may ease in both emerging and



developed economies, while the pace of fiscal consolidation may be heterogeneous. In 2021, the general government deficit as a percentage of GDP may be close to the 2020 value in developed economies, before showing a major improvement and reaching 4.6 per cent in 2022. On the whole, fiscal adjustment in emerging economies may be more protracted compared to pre-pandemic expectations, but the stance may vary significantly across countries. In emerging



economies, the budget deficit-to-GDP ratio may be 7.7 per cent at the end of this year and 6.7 per cent in 2022.

In parallel with the fiscal policies, central banks also pursued accommodative policies, as a result of which the balance sheet totals of the world's leading central banks rose to previously unseen levels. Central banks typically adjusted by expanding their existing asset purchase and credit programmes as well as by launching new programmes, reducing their policy rates and raising the volumes of their repo operations. Alongside the developed economies, the central banks of 27 emerging countries have started asset purchase programmes since the outbreak of the pandemic. The purchases of the most emerging

central banks were limited to government bonds, although some of them extended their respective programmes to corporate and bank bonds (Brazil, Chile, Hungary and Mauritius) as well as listed shares (Egypt). Looking ahead, further expansions in central bank balance sheets are expected, as at their latest meetings the world's leading central banks decided to continue their accommodative monetary policy stances. The monetary policy stance of emerging economies may also be accommodative in the coming period, but in the medium term it may pose a risk that with the gradual recovery of developed economies the world's leading central banks may move in the direction of monetary tightening.

Since the outbreak of the pandemic, the aim of many fiscal and monetary policy measures has been to support the actors of the real economy. Fiscal stimuli and the fall in government revenues increased debt indicators significantly in most countries, and further economy stimulus activities may raise governments' borrowing needs as well this year. As a result of central banks' expansive policies, central bank balance sheets expanded considerably. Looking ahead, central banks may keep their accommodative stance, but in the medium term a shift towards tightening may pose a risk for emerging economies.



Chart 7: Developments in the number of unemployed and the consumer confidence index in the EU

Source: Eurostat





Source: OECD. Eurostat

Households' relatively unfavourable labour market situation is reflected in the subdued consumer outlook. On the whole, the number of unemployed in the European Union increased to a lesser degree during the pandemic than at the peak of the financial crisis (Chart 7), which is partly due to the fact that as a result of the wide-ranging wage subsidies provided by the governments, some of the enterprises adjusted via the number of hours worked by employees. Although households' expectations moved away from their low point observed at the beginning of last year, they are still unfavourable concerning the labour market outlook. Even at the beginning of this year, the year-on-year increase in the number of unemployed amounted to an average one and a half million people. The decline in employment is especially strong in the sectors impacted by the lockdowns: in 2020 Q3, the year-on-year downturn in tourism and catering as well as in the arts and leisure sectors amounted to 16 per cent and 6 per cent, respectively. Those working in jobs that do not require a higher education degree were particularly unfavourably affected by the virus: while the number of people working in expert positions increased by 5 per cent, the number of those performing basic functions fell 9 per cent down in this period.

Households' net financial wealth increased in both in the USA and the Eurozone, but the pandemic may have increased social inequalities. As a result of the decline in consumption in view of the pandemic and due to state transfers, households' financial wealth increased in 2020 both in the USA and the Eurozone (Chart 8). The increase in cash and deposit holdings demonstrates well that state budgets helped households with significant amounts. In the USA the previously unseen grants significantly increased households' disposable income already in 2020 Q2. Nevertheless, according to the ECB's analysis,⁵ the pandemic may have further increased social inequalities. Firstly, among those belonging to the lower part of the income distribution, the ratio of people active in the sectors affected by the lockdowns is higher, and thus they may have suffered a greater decline in income. Secondly, typically the consumption of those belonging to the upper part of the income distribution fell more strongly, and thus their financial wealth may have expanded to a greater degree. Looking ahead, it is unclear how households will use their liquid savings following the lifting of restrictions. In the case of less wealthy households, a greater portion of

5 Source: Maarten Dossche, Jiří Slačálek, Guido Wolswijk (2021): Monetary policy and inequality, ECB Economic Bulletin, 2/2021



Chart 9: Bankruptcy declarations and the volume of restructured loans in Europe

Note: The number of bankruptcy declarations are seasonally adjusted data. Source: EBA, Eurostat





Note: IFRS 9 specifies three categories of impairment to reflect the risk of individual and portfolio-level assets. Stage 1 category includes nonproblematic loans that are subject to impairment for expected loss over a one-year period. An exposure is classified to Stage 2 category if there is a material deterioration in any of the associated risk conditions. Stage 3 category typically includes non-performing loans. National data do not cover the entire banking sectors, only the institutions included in the EBA Risk Dashboard, and some outstanding changes are attributable to composition effects. The distribution shows the 25-75 per centile values of the member states, and the minimum and maximum values. Source: EBA Risk Dashboard the accumulated savings may appear in consumption, while households that are in a better financial position may invest their accumulated cash reserves.

As a result of state programmes supporting the liquidity position of enterprises, there has been no rise in the number of bankruptcy declarations in Europe for the time being. In the European Union, the number of bankruptcy declarations submitted in 2020 Q2, Q3 and Q4 was 32.3 per cent, 18.5 and 17.9 per cent lower, respectively, than a year earlier, which was significantly attributable to government programmes that supported enterprises (Chart 9). The drop in the number of bankruptcies suggests that as a result of state measures even those companies that operated inefficiently in the pre-pandemic period were able to continue their operations. Looking ahead, many enterprises may move towards insolvency after termination of these programmes, which represents a financial stability risk. The European banking sectors have already reacted to the increase in credit risks, which - inter alia - was also reflected by the fact that by end-2020 in the case of the most significant European banks a significant rise of some 11 per cent took place in the restructured loan portfolio⁶ compared to the same period of the previous year.

1.3 The low interest rate environment and loan loss provisioning pose new challenges for banking sectors

Compared to previous years, the share of Stage 2 loans rose significantly for major credit institutions in EU member countries. The strong lending dynamics and portfolio cleaning due to the favourable economic environment in the pre-crisis years significantly improved credit institutions' portfolio quality in EU member countries. However, this trend was broken by the pandemic. Although the institutions that still had large legacy NPL portfolios were typically able to continue cleaning their portfolios in 2020 as well, in many countries this process decelerated or even reversed slightly. In parallel with that, the share of Stage 2 loans as per IFRS 9 (signalling a significant increase in credit risk) rose considerably in most EU Member States (Chart 10). The share of Stage 2 loans was 12 per cent on average in the CEE region in December 2020 and remains heterogeneous across the Member States. In connection with the Stage 2 classifications, forward-looking loan loss provisioning also increased. Institutions' portfolio quality may worsen with





Note: The cost of risk includes quarterly loan loss provisioning and impairment costs of financial assets that are not carried at fair value. The change is the difference between the end-2020 value and the average value between 2017 and 2019 in both cases. The Central and Eastern European countries and the EU average are marked in different colours. The change in the cost of risk of the banking system of Cyprus is -0.5 per cent. The right axis is inverted. Source: ECB CBD





the end of the payment moratoria and the expiry of the 9month EBA constraint.⁷

Banks' profitability was impaired by rising risk costs and declining operating income. In the first three quarters of 2020, based on a comparison of their levels from September 2020 to the average values between 2017 and 2019, there were unfavourable changes in the 12-month rolling income components as a ratio of total assets in the vast majority of the EU banking sectors (Chart 11). The shift in the cost of risk may have been attributable to the increase in the riskiness and loan loss coverage of assets. In terms of operating income, the profit reducing trend of the low interest rate environment continued, while a negative break was observed both in the interest income and fee and commission income in a number of countries. In CEE banking sectors, the average deterioration in both the cost of risk and operating income exceeded the EU average.

The current challenges may put pressure on the structurally low profitability of banking sectors in the longer run. The median value of the European banking sectors' 12-month return on equity (ROE) was 5.5 per cent in 2020 Q3, reflecting a sharp decline of some 2.4 percentage points compared to 2019 Q4 (Chart 12). According to the autumn questionnaire of the EBA, despite the low level, less than one half of major European banks expect an improvement in profitability in the coming 6-12 months. The two main underlying reasons for this are the persistently low interest rate environment and the income reducing effect of loan loss provisioning. Looking ahead, one sign of a major risk is that an increasing number of banks expect a deterioration in asset quality in all segments in the next quarters. Banks may adjust to the profitability challenges by reducing operating expenses, mainly by enhancing digitalisation and lowering staff expenses. On the whole, according to the EBA survey, nearly 65 per cent of the major European banks declare that the current level of return on equity (ROE) does not cover the cost of equity (COE) expected by investors, which may also make access to funding more difficult for the institutions.

⁶ The increase in the forborne loan portfolio may also have partly been attributable to the fact that in some banking sectors the moratoria on loan repayments is not compliant with the EBA's respective guidelines, according to which payment moratoria do not automatically trigger classification as forborne if the given loan was in moratorium for less than nine months before 30 June 2021.

⁷ Recommendation of the European Banking Authority (EBA) on moratoria updated on 2 December 2020: <u>https://www.eba.europa.eu/regula-</u> tion-and-policy/credit-risk/guidelines-legislative-and-non-legislative-moratoria-loan-repayments-applied-light-covid-19-crisis



Chart 13: Share of banks traded above book value and average P/BV in Europe and the USA

Note: The data are available for 865 European and US banks in total. Source: S&P Market Intelligence Structural and profitability challenges are also reflected in banks' deteriorating market valuation. Irrespective of geographical location, the coronavirus crisis had an unfavourable impact on banks, which was reflected in their worsening valuation as well. Compared to the prepandemic situation, by 2020 Q3 the ratio of banks whose market valuation exceeds their book value declined from 75 per cent to 16 per cent in the case of US banks and from 27 per cent to 14 per cent in the case of European banks (Chart 13). Nevertheless, the average of US banks' price-tobook value (P/BV) is still some 20 basis points higher than that of European banks. One of the underlying reasons may be that European banks were characterised by slower balance sheet cleaning after the 2008 crisis than their US peers, and the profitability of the EU banking sectors, which operate with higher cost-to-income ratios, is much lower than that of US banks. The rise seen in long-term yields may result in higher interest incomes in certain loan portfolios, but the expected delay in the normalisation of the interest rate environment and the structural challenges may put pressure on the operation of institutions in both banking systems for a longer time than expected before.

2 Real estate markets: different prospects across segments, manageable bank risks

Primarily due to the new housing benefits, there was a strong upswing in demand in the housing market in early 2021, with the number of transactions rising by 20 per cent year on year in February. On the supply side of the housing market, expansion is facilitated by the preferential VAT rate for residential properties, which was reintroduced from January 2021. The rise in housing prices continued on a national average, although at a slower pace than before. In central Pest, however, mainly due to the disappearance of international tourism as a result of the coronavirus pandemic, housing prices have declined only slightly so far, dropping by roughly 7 per cent until February 2021 compared to the peak in 2019. The affordability of homes is increased by housing benefits and family allowances, especially in the countryside where price levels are lower. Accordingly, a significant expansion in housing market that excessive lending is heating up the housing market.

Most of the segments in the domestic commercial real estate market were negatively affected by the coronavirus pandemic. Demand waned, while vacancy rates and yields expected by investors increased. The segment of offices and hotels is characterised by strong real estate development activity. Looking ahead, however, it is coupled with uncertain demand, and thus the risk of oversupply also arises, especially in the hotel segment. At the same time, the segment of industry and logistics has remained resilient due to the accelerating spread of online trading as a result of the pandemic. The investment volume declined by 41 per cent in 2020, and the execution of transactions is hindered by the containment measures as well. At the same time, high yield spreads are expected to maintain investors' interest. The banking sector's exposure to the real estate market is much lower compared to the previous crisis, which limits the risks originating from the sector.



Chart 14: Annual change in the number of housing market transactions by settlement type

Note: Until 2019 Q4 based on comprehensive NTCA data, and thereafter based on housing agents' data. Source: National Tax and Customs Administration (NTCA), housing agents' database

2.1 Family allowances increase demand significantly, but there are no signs of overheating from the side of lending

There was a major upswing in housing market demand in early 2021, with the number of transactions rising in Budapest and the countryside as well. In 2020, based on housing agents' data, the number of transactions fell by a total 10 per cent year on year, primarily due to the significant, 58-per cent downturn in April 2020. Nevertheless, the market already expanded starting from the summer months (Chart 14). From January 2021, demand for residential properties grew considerably: according to market advertisement data, in January and February the number of inquiries for flats increased by 11 per cent, while inquiries for family houses rose even more, by 32 per cent. The expansion in demand resulted in a rise in the number of transactions. Based on agents' data, for Hungary as a whole, the number of sales transactions in January and February 2021 was up by 28 per cent and 20 per cent, respectively, year on year. The number of transactions increased to a greater degree in the countryside than in the capital. The pick-up in demand

Chart 15: Changes in rents (left chart) and house prices (right chart) in the country as a whole and in certain groups of districts in Budapest (2015 = 100 per cent)



Note: Rents based on the HCSO-ingatlan.com house-rent indices, house price indices on the basis of MNB estimate. Buda mountainous district: I., II., XII., Buda other districts: III., XI., XXII., Pest inner districts: V., VI., VII., VIII., IX., Pest transitional district: X., XIII., XIV., XIX., XX., Pest outer districts IV., XV., XVI., XVII., XVIII., XXII., XXIII. Source: HCSO-Ingatlan.com, MNB housing agent database

Chart 16: Housing Affordability Indices (HAI) for Budapest taking into account home creation subsidies



Note: HAI indices show the number of times the income of a household with two average earnings and different number of children covers the income required for the credit-financed purchase of new and used home with median price, considering home creation subsidies, or without them ("not subsidised" case). The assumed size of the home is 65 m2 for a household with 2 children and 75 m2 for a household with 3 children. Parameters of the loan product, except for the interest rate, are constant until maturity. LTV = 70 per cent, DSTI = 30 per cent, maturity = 15 years. Source: MNB, HCSO

already reflects the impact of the new housing benefits launched on 1 January 2021.

House prices increased further on a national average in 2020 and in early 2021 as well, but declined slightly in central Budapest due to the coronavirus pandemic. On a national average, house prices in Hungary did not decrease even following the appearance of the coronavirus pandemic in the spring of 2020 (Chart 15). House prices continued to appreciate, although the annual dynamics were somewhat lower. While the annual growth rate of housing prices reached as high as 20 per cent in 2019, in the three months before February 2021 it amounted to 8 per cent on average according to agents' data. By contrast, the annual dynamics of housing prices was around 1 per cent in Budapest, and different developments are seen even within the individual areas of the capital. As a result of the disappearance of international tourism due to the coronavirus pandemic, many flats rented for a short period in Budapest moved to the long-term lease market, which significantly contributed to the approximately 56-per cent increase in supply according to February data. Accordingly, rents in the capital declined considerably, falling by 14.1 per cent year on year in February 2021 and to an even greater degree (by 17.4 per cent) in the central areas of Pest, which are mostly affected by tourism. Lease market developments affect house prices as well. Compared to the peak in September 2019, house prices in the central districts in Pest were some 7 per cent lower in February 2021, while in most of the other areas of Budapest they were close to or even exceeded the 2019 peak. If the return of international tourism is delayed for a longer period, a larger decline in house prices in the city centre may pose a risk.

The affordability of homes is strongly facilitated by the new and previously introduced family allowances, considerably increasing the demand in the housing market. As a result of the family support and home creation subsidies, the affordability of residential properties improved considerably (Chart 16). Affordability first rose for new homes when the HPS was expanded in January 2016: the amount of loan needed for purchasing a new flat in the capital declined by nearly 50 per cent in the case of families with 3 children, which represent a smaller part of the society, and by 10 per cent in the case of families with 2 children. In the following periods, however, the rise in real estate prices significantly eroded the positive effects of the HPS. Affordability improved significantly with the introduction of the prenatal baby support loan in 2019 already for the buyers of used homes





Source: MNB

as well (who were planning more children), although the home purchase chances of families with 2 or 3 children were affected to various degrees because of the features of the product.⁸ The subsidies available as of January 2021⁹ further improved the possibilities of those using the HPS for purchasing, but these benefits resulted in a smaller improvement in affordability than the previous ones.

The favourable financing and subsidising environment may significantly heat the demand, although signs of excessive lending are not yet being seen in the housing market. Since the launch of the prenatal baby support loan in July 2019, 13.4 per cent of the housing transactions in Budapest have been below a purchase price of HUF 20 million, while 76 per cent of the purchases have not reached this amount in the countryside (Chart 17). Accordingly, due to the lower price level, the home creation subsidies and family allowances available in the countryside - especially in small settlements where the rural HPS is available - increase the potential affordability of home purchases and thus housing market demand as well to an even greater extent. At the same time, even in spite of the expansion observed in the past years, there are no signs of excessive lending that would heat the domestic housing market. The ratio of home purchases from loans was 47 per cent in 2020 Q4, which still represents a moderate level. The average loan-to-value (LTV) ratio of mortgage loans rose from 40.6 per cent in 2016 Q4 to 49.8 per cent by 2020 Q4 in Budapest and in the same period from 46.2 per cent to 52.6 per cent in the countryside. In view of the debt cap rules introduced in 2015, the risk of excessive indebtedness is lower, since the regulation limits the amount of the loan at 80 per cent of the value of the property. The ratio of new housing loans with an LTV of above 70 per cent, which is close to the regulatory limit, was 36 per cent in 2020 Q4, which is much lower than in 2008, when it reached as much as 74 per cent. On the basis of the MNB's agent-based housing market model, with a 90-per cent LTV requirement, which is looser than the current one, the coronavirus pandemic would entail more non-performing housing loans and higher losses for banks (Box 2).

⁸ In the case of deciding to have three children, the general purpose prenatal loan amounting to maximum HUF 10 million will transform into a grant if the couple borrows the loan during pregnancy, then their second child is born within three years, and the third child is born within another three years.

⁹ Those purchasing with the use of HPS are exempt from paying the 4-per cent stamp duty and may request a refund of the 5-per cent VAT content in the case of buying a new home.

Chart 18: Distribution of households with at least one mortgage loan according to estimated loan-to-value (LTV) ratio including prenatal baby support and personal loans



Note: Loans issued after 1 July 2019. The total LTV ratio includes the taking of prenatal baby support and personal loans only if borrowing the latter preceded the taking of the mortgage loan by maximum 180 days. Source: MNB

Chart 19: Annual rolling number of building permits

issued for homes and new housing completions



Source: HCSO

A maximum 14 per cent of the borrowers of mortgage loans have complemented their own funds through prenatal baby support or personal loans since July 2019. Since the launch of the prenatal baby support loan programme, 45.9 per cent of debtors who take mortgage loans as well following the borrowing of prenatal baby support or personal loans have current LTV ratios that take into account the total debt above 80 per cent, and 26.7 per cent of them are exceeding 100 per cent (Chart 18). Firstly, however, the risks are limited by the fact that such complementing of own funds may have taken place only in the case of 14.3 per cent of mortgage loan debtors who have concluded contracts since July 2019. Secondly, according to the MNB's previous survey, in terms of financial stability, the prenatal baby support loan debtor segment has good attributes: 41 per cent of them belong to the top income quintile. In addition, 44 per cent of the prenatal baby support loan contracts are already interestfree because of childbearing, and in the case of some debtors the loan will become a grant with the birth of the third child. The financial stability risks of a possible excessive indebtedness through the prenatal baby support loans are also significantly reduced by the state guarantee included in the product.

The supply of new homes expanded considerably in 2020 and looking ahead the preferential VAT rate for residential properties may keep supply at a higher level than in the previous years. 28,200 new homes were completed in 2020, which is a significant expansion of 33.5 per cent compared to 2019 (Chart 19). The 43-per cent increase in home construction in the countryside was the main contributor to this expansion, while in Budapest the number of new homes completed increased by 8.6 per cent. By contrast, in 2020 the number of new building permits issued fell by 35.8 per cent year on year, while it decreased to a greater extent, by 47.7 per cent, in Budapest. At the same time, a positive change in the willingness to build new homes is foreshadowed by the fact that, following the decline lasting since 2019 Q3, the number of new homes currently under development or being sold increased for the first time in Budapest in 2021 Q1. The temporary reintroduction of the preferential, 5per cent VAT rate for residential properties from 2021 may preserve the momentum of home construction in the coming years, and thus supply may remain at a higher level compared to previous years.

BOX 2: AGENT-BASED HOUSING MARKET MODEL: IMPACTS OF THE REGULATION REGARDING THE LOAN-TO-VALUE RATIO AND OF THE COVID CRISIS

The MNB developed an agent-based housing market model to examine the correlation between housing market developments and household lending as well as to analyse the effect of macroprudential policy (mainly debt cap) rules. The agent-based modelling approach means a simulation technique the main advantages of which – compared to other structural methods – is that it allows the depiction of the high degree of heterogeneity of economic agents and that – similarly to reality – persistent imbalances may evolve in the model in individual markets. These features are essential in the examination of macroprudential policy.

The model represents nearly ten million people, four million households and homes as well as all of the housing loan contracts existing between households and the banking sector, thus providing a complete mapping of the relevant part of the Hungarian economy. We have detailed, complete (but at the same time anonymous) data on households' income subject to pension contribution, on their housing loan contracts and housing market transactions, from which we generated the players (agents) and homes of the model using the census and demographic data of the HCSO. The households included in the model consume, may purchase homes, pay rent or repay loan and save from earned income (which depends on work experience and qualifications) or from the rent in the case of letting out one's own residential property. They may even become unemployed with some probability (depending on educational level). The homes are characterised by three features: their size (in square metres), quality (including characteristics such as the type of heating, year of construction, condition of the home) and their location (we divided the territory of Hungary into 124 parts). Households' decisions regarding consumption and home purchase as well as choosing between individual homes are described by a unique utility function for each household. Everybody would like to live in a better home, but how much they are willing to pay for it differs. If a household owns more than one residence, it tries to rent out the remaining one(s), and in addition a central investor also offers homes for rent. If a household does not have enough savings to purchase a home, it may apply for housing loan, which it receives from the bank if there is high probability that it will be able to repay the loan, and if it complies with the rules set by the macroprudential authority concerning the loan-to-value¹⁰ (LTV) ratio and the debt-service-to-income (DSTI) ratio. If a household becomes non-performing, they first try to restructure its loan, but if that does not help either, the property is subject to forced sale. In addition, the model contains the construction industry, which builds new homes and renews existing ones.¹¹

We examined the possible impacts of the negative economic shock caused by the pandemic and of the LTV rule on the housing and loan markets running the model with monthly frequency, using various scenarios between January 2018 and December 2024. In the baseline scenario, we took into account the currently valid 80-per cent LTV rule and the impact of the COVID shock, and thus we determined nominal GDP and the unemployment path based on the forecast in the MNB's December 2020 Inflation Report. In the case of all the three qualification groups (elementary, secondary, higher education), we expected an increase in unemployment. At the same time, in line with previous crisis experiences, we assumed a stronger impact for those with lower qualifications. We compared two hypothetical scenarios to this: in the first one, we assumed a macroeconomic growth without a pandemic situation (on the basis of the forecast in the December 2019 Inflation Report), while in the second one we applied a looser, 90-per cent LTV requirement over the entire time horizon. None of the simulations presumed a payment moratorium.

In the baseline scenario, housing market activity over the examined 5-year time horizon is only slightly more moderate compared to the scenario without the pandemic, while lending is persistently lower. Without the COVID shock, new lending would have been 13–29 per cent higher every year ceteris paribus, according to the results of the model. The underlying reason on the one hand is that households that become non-performing during the crisis do not receive loans in the next 5 years, and on the other hand, as a result of the negative unemployment and income shocks the households concerned consume their savings, and are thus crowded out of the credit market due to the shortage

¹⁰ During home loan borrowing, the households' own funds expected by the loan-to-value ratio can only be provided from their accumulated savings, i.e. there is no possibility of replacement of own funds through other borrowing in the model.

¹¹ A more detailed presentation of the model can be found through the link below: <u>https://www.youtube.com/watch?v=geFDESrr6u0</u>.

of own funds. Accordingly, the resulting lower lending has a persistently negative impact on the housing market as well. The NPL portfolio would increase considerably in the first two years of the crisis, and would then improve in conjunction with an upswing in the housing market. Nevertheless, because of the payment moratorium (not included in the model), the real difference between the two scenarios is much more moderate.

| | No COVID-19 shock (per cent) | | | | Less stringent LTV-regulation (per cent) | | | | | |
|-------|--|--------------|------------------------|--|--|--------------|------------------------|--|--|--|
| | Average price of sold apartments | Transactions | Stock of new credit | Stock of non- performing housing loans | Average price of sold apartments | Transactions | Stock of new credit | Stock of non- performing housing loans | Ratio of loan contracts with an LTV above 80 per cent | |
| 2019* | - | - | - | - | 8 | 14 | 39 | 7 | 11 | |
| 2020 | 5 | 5 | 24 | -32 | 3 | 14 | 43 | 13 | 17 | |
| 2021 | 11 | 5 | 29 | -43 | 4 | 8 | 25 | 10 | 16 | |
| 2022 | 11 | 1 | 13 | -12 | 6 | 10 | 29 | 6 | 14 | |
| 2023 | 8 | 3 | 21 | -7 | 2 | 8 | 33 | 8 | 17 | |
| 2024 | 11 | 6 | 19 | -6 | 2 | 9 | 26 | 16 | 13 | |

Difference between the hypothetical scenarios and the baseline scenario regarding the main variables

Note: *COVID-19 appeared in Hungary in 2020, therefore does not affect the values for 2019. Source: MNB

From a macroprudential perspective, one important result of the simulation run with a looser LTV requirement is that it not only results in a more buoyant credit and housing market compared to the baseline scenario, but at the same time it also leads to many more non-performing households and significantly higher bank losses as well. The looser lending conditions have a major impact on the housing market: because of the increased demand, house prices at the annual level and the number of transactions would be 2–8 per cent and 8–14 per cent higher, respectively. The difference between the two scenarios in the first two years, which are less affected by the crisis, is greater, i.e. house prices are not only higher but also more volatile (they declined to a greater degree from a higher level). The stock of new loans would be 25–43 per cent higher at an annual level, which is partly caused by the additional borrowing of households that are becoming creditworthy or more indebted as a result of the looser LTV requirement, while higher house prices require higher amounts of loans. In the case of a looser LTV requirement, the NPL stock is 6–16 per cent higher than the value in the baseline scenario. An even more serious consequence is that bank's loan loss provisioning would be more than twice as high with a looser LTV until 2024. Loan loss provisioning rises as a result of two separate

effects: firstly, debtors' probability of default (PD) and the NPL ratio increase due to the higher indebtedness, and secondly, the higher 35 volatility of house prices increases the loss 30 given default (LGD) as well.

With a looser LTV rule, every year the borrowed amount would exceed 80 per cent of the value of the residential property in the case 11–17 per cent of the credit agreements. Some of the households borrowing with the 90-per cent LTV rule would have become indebted (although to a lesser degree) even if the regulation had been stricter, while loans would not have been available for others. As a result of the agent-based approach, we can examine which households have better access



to loans with a looser LTV rule at a lower level of aggregation as well, and whether this poses an elevated credit risk. The low- and medium-income strata of the society (deciles 1–7) only account for about 25 per cent of the creditworthy demand, and they are probably limited by the regulation regarding the debt-service-to-income ratio as well. Therefore, their share within outstanding loans will not grow even if the LTV rule is looser. In terms of proportion, the outstanding

loans of those with higher incomes, belonging to deciles 8–9, grow to a larger degree. Presumably they are highly qualified, young households with high income, but low resources of their own. In the case of these two deciles, however, the NPL stock also increases significantly, indicating that the additional amount of loans extended caused excessive indebtedness for these households.

Within the literature dealing with macroeconomic crises, many studies highlight that poorer strata are more affected by crises, and thus the latter result in increased social disparities, which is also confirmed by the results of our model. The most accepted measure of inequality is the Gini index, which ranges from 0 to 1. A higher value indicates greater inequality, and during its calculation every household must be taken into account at the individual level. We examined whether the changes in inequalities in the case of the three scenarios presented so far are similar in terms of income position, housing wealth and net wealth position. Of the above three factors, the inequalities are the smallest in housing wealth and the greatest in net wealth position: a high percentage of the Hungarian population have housing wealth, and the higher the income the less they spend on dwelling. This suggests that differences are smaller in housing wealth, and greater in savings than in income. Based on all the three Gini indices, it is clear that a negative shock increases disparities. This effect is temporary in the income Gini index, but in the wealth Gini indices it is more persistent, especially as far as net wealth is concerned. The underlying reason for this is that poorer households consume their reserves during a crisis, which also impairs their creditworthiness and net wealth position. Differences are smaller between the scenarios calculated with the two types of LTV requirements than in the case of the



comparison capturing the impact of 0.60 the crisis. With the higher borrowing taking place in the case of the looser LTV requirement, the purchase of homes of their own becomes affordable for a wider range of households, reducing the disparities in housing wealth. Accordingly, mortgage lending to households plays an important role in the reduction of inequalities. However, as it leads to higher indebtedness, it has only a very moderate impact on inequalities in terms of the net wealth position, and that impact is only perceived following the recovery after the crisis.

Note: Housing wealth: only among property owners. Net wealth: the sum of housing wealth and savings

On the whole, according to our

model, the negative economic impacts of the pandemic result in lower housing market activity and lending for housing as well as higher loan losses compared to a 'pandemic-free world'. The impact of the pandemic, however, may be strongly mitigated by the payment moratorium and housing benefits. As opposed to the scenario with the looser, 90-per cent LTV ratio, by restraining excessive household indebtedness and banks' assumption of risks, the current debt cap rules result in fewer non-performing mortgage loans and lower bank losses. Similarly to other crises, the COVID crisis increases disparities in income and wealth. Therefore, support for poorer social strata may become more important in the coming years.

| | Office | Industrial- logistics | Retail (shopping centre) | Hotel | |
|--------------------------------------|---------|--------------------------|--------------------------------|-------------------------|--|
| Vacancy rate | 9.1% | 2.0% | 7.0% | Room occupancy: <30% | |
| Annual change in vacancy rate | +3.5 pp | +0.1 pp | +4 pp | <-35 pp | |
| Annual change in demand | -45% | +30% | - | -60% +1.4% | |
| Annual change in supply | +6.3% | +5.7% | 0% | | |
| Annual change in rent | +4% | 0% | -20% | - | |
| Annual change in investment yield | +50 bp | 0 bp | +75 bp | - | |
| Change in financing conditions | +37% | +21% | +48% | - | |

Table 1: Main features of the Hungarian commercial realestate market in 2020

Note: Based on end-2020 data. Data increasing and reducing the risk of a decline in the value of real properties are in red and green, respectively. Demand on the basis of total renting and the number of overnight stays, supply on the basis of new completions. Percentage values shown for the change in financing conditions on the basis of banks' responses to the Lending Survey, the average of the institutions' market share-weighted responses indicating tightening and easing calculated for four quarters of 2020. Source: CBRE, Cushman & Wakefield, HCSO, MNB

Chart 20: Investment volume of the Hungarian CRE market, its composition and prime yields



Note: The 10-year HUF government bond yield is the yearly average of the average yield of auctions. The 10-year Eurobond yield is the yearly average of the 10-year government bonds issued by AAA-rated Eurozone countries. Source: CBRE, Cushman & Wakefield, ECB, MNB

2.2 High-volume development projects and uncertain demand characterise the commercial real estate market

Most segments in the commercial real estate market¹² were unfavourably affected by the coronavirus pandemic, and no recovery is expected before end-2021. Demand for renting and investment declined, while vacancy rates and yields increased (Table 1). One exception from this was the industry and logistics segment, which - on the whole - benefited from the social and economic developments triggered by the pandemic, i.e. mainly from the upswing in online trading and changes in supply chains. At the same time, hotels were compelled to close and suffered significant losses. In the office, retail trade and hotel markets, lower demand and rents and the higher yields expected by investors are factors that boost the risk of a decline in real estate values. The third wave of the coronavirus pandemic warranted the introduction of strict precautionary measures again, and thus recovery in the commercial real estate market is only expected to start from end-2021. At the same time, the banking sector's exposure to the commercial real estate market is historically low as a percentage of the regulatory capital, which significantly limits the risks originating from the sector (Box 3).

Investment turnover declined considerably, but the available yields still maintain interest. In 2020, investment turnover on the domestic commercial real estate market contracted by 41 per cent compared to the previous year (Chart 20). One reason for the decline was that the high degree of economic uncertainty resulted in a wait-and-see attitude and the postponement of investment decisions. Another was that the travel restrictions and obstacles to due diligence also resulted in the postponement of transactions already underway to 2021; the value of such is estimated to amount to several hundred million euros. The yield spreads offered by commercial real estate investments are still high: at end-2020, the spreads of the bestquality offices compared to the 10-year euro and forint government securities reference yields were 6.2 per cent and 3.5 per cent, respectively. These favourable spreads maintain the attention of domestic investors and also of international investors interested in the region.



Chart 21: Development activity and vacancy rate in the

Note: Net absorption: shows changes in the lease stock in the period considered. Some of the offices in the preparatory phase, but not yet under construction, may be completed in 2022 the earliest, depending on when construction work actually starts. Based on 2020 Q4 data. Source: Budapest Research Forum, Cushman & Wakefield

Chart 22: Number of opened and planned hotel rooms in Hungary and the performance indicators of the tourism sector



Note: Data for 2021-2022 includes the number of rooms in hotel projects that were in the phase of preparation or under construction at the end of 2020 and are expected to open by the end of 2022. Source: CBRE, Cushman & Wakefield, HCSO, Hungarian Hotel & Restaurant Association

The office market is dominated by the uncertain impact of working from home on the long-term demand for offices, while new supply is at a high level. In 2020, some 232 thousand square metres of new office area was completed in Budapest, corresponding to a 6.3 per cent expansion in a year (Chart 21). Apart from the nearly similar volume in 2018, a higher volume than the above was last completed in 2009. While supply increased, demand for office space offered for rent ebbed considerably: net market absorption in 2020 was 49 per cent lower than in 2019, but rents have remained at an unchanged level for the time being. In view of this, the vacancy rate rose from 5.6 per cent to 9.1 per cent in 2020 and looking ahead it may even rise to above 10 per cent as a result of the high volume of office completions expected in 2021 and 2022. Future demand for offices is surrounded by high uncertainty. The spread of working from home and the possibility of this partially remaining over the long term suggests a decline in demand for offices, with a contribution from companies' cost optimisation approach. At the same time, the expected increase in the number of office workers, the function of the office as a community space and less dense seating point in the opposite direction.

Due to the suspension of tourism, the coronavirus pandemic impacted the hotel segment most severely. As a result of the containment measures, in 2020 the number of overnight stays at domestic accommodation establishments fell by a total 58 per cent. In the summer, thanks to the temporary recovery in domestic tourism, the decline in foreign tourism was greater, which affected Budapest to a greater degree (Chart 22). The number of non-residents' overnight stays in the capital fell by 81 per cent, while residents' overnight stays in the country dropped by 38 per cent versus the previous year. As a result of the restrictions, many hotels had to close: in December, the number of available hotel rooms was 56 per cent lower than a year earlier. The hotel segment was characterised by buoyant development activity in the past years. In 2021 and 2022, 3,800 new hotel rooms are expected to be completed, whereas in the past years the number of new hotel rooms completed was between 700-1,200. Thus, a risk of oversupply remains in the market.

¹² For more on the developments on the commercial real estate market, see the MNB's <u>Commercial Real Estate Market Report</u> published in April.

BOX 3: EXPOSURE OF THE BANKING SECTOR TO THE COMMERCIAL REAL ESTATE MARKET AND THE RISKS OF PROJECT LOANS

The banking sector's exposure to the commercial real estate market as a percentage of the regulatory capital is at a historically low level, and thus banks' resilience to shocks vis-à-vis the market shows a much more favourable picture

than 10–12 years ago. At the outbreak of the 2008 crisis, the credit institutions sector's project loan exposures related to commercial real estates were characterised by excessive risk taking, as the stock reached 77 per cent of the regulatory capital. By end-2020, this ratio had declined to 24 per cent, and a decrease was also observed in connection with the volume of new lending compared to the regulatory capital, falling from 34 per cent in 2008 to 6 per cent. At end-2020, 46 per cent of commercial real estate project loans outstanding were related to the development or purchasing of offices and trade centres, and outstanding bank loans vis-à-vis the segment reached HUF 644 billion at the end of the year. Looking at credit institutions' commercial real



estate loan disbursements in 2020, loans for offices and trade centres accounted for 40 per cent of the annual volume, while the shares of loans for residential real estate projects and industrial properties amounted to 21 per cent and 19 per cent, respectively. Of the types of real estate, only the disbursements for the segment of industry and logistics increased (by 30 per cent) compared to 2019; loans for offices, retail trade, hotels and residential real estate projects were down by 38–62 per cent compared to the previous year.

At end-2020, 47 per cent of the commercial real estate loans eligible for moratorium participated in the programme. This is a somewhat higher value than the 39-per cent share observed within the total corporate loan portfolio. Looking at the types of properties, the ratio of participation in the moratorium was the highest in the case of loans extended



for the financing of hotels (77 per cent), while only one fifth of the project loans of the warehousing and logistics segment participated in the programme. At end-2020, outstanding project loans related to hotels and retail properties in moratorium amounted to HUF 305 billion, corresponding to 51 per cent of the outstanding loans in moratorium covered by commercial real estate. With the end of the moratorium, the risk of default may increase the most in the case of loans extended for the financing of hotels and retail properties. In these segments, recovery may start with reaching an appropriate level of vaccinations and with the return of tourism.

The interbank concentration of commercial real estate project loans can be considered moderate: the three banks with the largest commercial real estate loan exposures hold 56 per cent of the stock. The highest concentration is found in the segment of warehousing and logistics, where this indicator amounted to 80 per cent at the end of 2020 Q4, but the concentration indicator for project loans extended for the development and purchasing of shopping centres and residential real estate projects was also 76 per cent and 70 per cent, respectively. By contrast, the hotel and office segments exhibit lower concentrations of 58 per cent and 64 per cent, respectively.

The risk increasing effect of the coronavirus pandemic on the commercial real estate market is well reflected by the reclassifications of these exposures of banks between loan loss categories. Within commercial real estate project loans outstanding and amounting to some HUF 1,395 billion, a total exposure of HUF 330 billion was reclassified by end-2020 compared to end-2019 from the Stage 1 loan loss category to the Stage 2 category, which means that since the starting of these loans the degree of credit risk has increased considerably. This represents 33 per cent of the stock of project loans already in banks' balance sheets in 2019 Q4, which is a considerably higher share compared to the level of 18 per cent for the total corporate loan portfolio. At the same time, banks have categorised only just 4 per cent of the stock into the Stage 3 category.

| HUF bn | | 2020 Q4 | | | | | | | |
|---------|-------|---------|-------|------|-------|-------|-------|------|--------|
| | | | I | HUF | | FX | | | |
| | | STG1 | STG2 | STG3 | Total | STG1 | STG2 | STG3 | Total |
| 2019 Q4 | NA | 96.2 | 18.9 | 3.0 | 118.1 | 227.4 | 36.1 | 9.5 | 273.0 |
| | STG1 | 108.0 | 88.3 | 0.3 | 196.6 | 463.5 | 241.2 | 5.5 | 710.2 |
| | STG2 | 0.2 | 7.4 | 0.9 | 8.5 | 13.1 | 45.3 | 0.2 | 58.5 |
| | STG3 | 0.1 | 0.3 | 8.3 | 8.7 | | | 21.3 | 21.3 |
| | Total | 204.6 | 114.8 | 12.4 | 331.8 | 704.0 | 322.6 | 36.5 | 1063.1 |

Distribution of commercial real estate project loans by type of impairment in 2019 and 2020 Q4 by denomination of the loans

Note: Loans not categorized in 2019 (no data available) mostly include loans contracted in 2020. Source: MNB

Banks perceive different risks across the various real estate segments, and the highest portion of reclassification to a worse loan loss category (to Stage 2 or Stage 3) took place for the project loans extended for the purchase or development of hotels and residential real estate projects. Compared to 2019 Q4, in the case of the hotel segment and residential real estate project loans, the banks perceived major credit risk increase for 59 per cent and for 35 per cent of the loans outstanding, respectively, in 2020 Q4. By contrast, only 2 per cent of office project loans and 20 per cent of warehouse-logistics loans outstanding were reclassified to the Stage 2 or Stage 3 categories in 2020.

On the whole, banks' exposure to the commercial real estate market remained subdued even in spite of the increase in project lending activity in the past years. Looking ahead, following the end of the moratorium, the probability of default is the highest in the case of the loans related to hotels, and banks reclassified mostly this segment's loans to a higher loan loss category. At the same time, the banking sector's capital position is stable, and thus it will be able to manage any possible risks arising in the market of commercial real estate.

3 Trends in lending: the vivid credit market underpins the liquidity position of the private sector

Growth in outstanding corporate loan portfolio persisted despite the coronavirus pandemic, and the dynamics can still be deemed robust in international standards. Transaction growth was seen in a wide range of sectors and was mostly linked to small and medium-sized enterprises and forint loans. Apart from commercial property financing, no major tightening occurred in credit standards despite the increasingly stringent measures taken to contain the pandemic, and demand rose significantly both for short- and long-term loans in the second half of 2020. The central bank and government loan programmes, introduced with a view to countering the negative impacts of the pandemic on real economy, supported the credit market to a significant degree. In the second half of 2020, almost 50 per cent of new disbursements were realised within the framework of FGS. Enterprises that were able to reduce the number of their loans in moratorium in the second half of the year drew down new loans in the amount of almost HUF 870 billion. The ratio of loans outstanding affected by the payment moratorium fell significantly, dropping to 39 per cent of the eligible portfolio by the end of 2020. In the first half of 2021, new government credit and guarantee programmes were announced and the budget of previous programmes also increased significantly. Accordingly, in an international comparison, the total amount of Hungary's guarantee programmes as a percentage of GDP already belongs to the mid-range of the EU Member States. The subsidised programmes, supplemented with the amortisation-reducing effect of the prolongation of the moratorium on loan repayments by six months, contribute to the further balanced growth in the corporate loan portfolio.

Growth in household loans outstanding is still supported by the instalment reducing effect of the payment moratorium. Otherwise, the coronavirus pandemic still curbs the disbursement of new loans, particularly in the unsecured consumer loan segment. Banks anticipate increasing demand for 2021, partly due to the support measures aimed at homebuyers, which enter into force this year. However, the impact of these may vary in the individual product segments. The ratio of loans outstanding participating in the moratorium did not change substantially in the second half of 2020, amounting to 54 per cent of the eligible stock at the end of 2020. In addition to the moratorium and the recovering credit demand, state-subsidised credit schemes also support growth in household loans outstanding. Accordingly, double-digit growth dynamics may persist even despite the pandemic. Compared to the 2008 crisis, households were hit by the economic impact of the pandemic in a more stable position characterised by low indebtedness. Almost 10 per cent of the borrowers may be deemed significantly indebted. For the time being, they are supported by the moratorium, but the unfavourable labour market effects of the pandemic may generate difficulties for them later on. The savings situation is heterogeneous, with many lacking sufficient liquidity buffers for a prolonged crisis.



Chart 23: Growth rate of outstanding loans of the overall corporate sector and the SME sector

Note: Transaction-based growth rates based on credit institution sector data. Prior to 2015 Q4, data for SMEs are estimated based on banking system data. Source: MNB

3.1 The payment moratorium and statesubsidised products maintain the expansion of corporate lending

Despite the pandemic, growth both in the overall corporate loan portfolio and in the SME sector continued, albeit the two rates diverged substantially from each other. In 2020, the corporate loan portfolio grew by HUF 780 billion, falling short of the growth registered in 2019 by 25 per cent, and thus the annual growth rate reached 9.4 per cent (Chart 23). The moratorium on loan repayments sustained the dynamics to a large degree. Without it, the estimated growth rate would have been between 0 and 3 per cent. Due to the government and central bank loan programmes



Chart 24: Cumulated transactional corporate growth rate in an international comparison

Note: The group of Mediterranean countries include Italy, Spain, Portugal and Greece. Source: MNB, ECB





Note: Indebtedness: outstanding loan/EBITDA. The EBITDA ratio is from 2019 in the case of both periods. The chart shows the average indebtedness of corporations with outstanding loans, indebted between 0 and 20, by two-digit NACE (TEÁOR) sectors. The bubbles show the number of companies active in the relevant sector. Source: NTCA, MNB introduced as a result of the coronavirus, growth in SME loans was substantially higher, with the annual growth rate reaching 13.2 per cent. However, this relatively high growth can still be deemed balanced: the distribution of corporations' indebtedness at the end of 2020 as a percentage of 2019 EBITDA has not changed substantially compared to the end of 2019 in the individual sectors of the national economy. Despite the preventative measures introduced in autumn to contain the pandemic, in 2020 Q2 corporate loan portfolio rose by HUF 227 billion, with the growth primarily linked to loans with initial maturity over one year. At the end of 2021 Q1, the annual growth rate was 6 per cent in the overall corporate segment, and 17 per cent in the SME segment, according to preliminary data.

In an international comparison, Hungarian credit growth can still be deemed robust. Since the appearance of the coronavirus in Europe, the Hungarian corporate loan portfolio grew by almost 10 per cent, which is slightly above the growth registered in the euro area and substantially exceeds the average value of the non-euro area Member States (Chart 24). Despite the pandemic, in 2020 the annual growth rate in the euro area exceeded the level registered one year ago by 3 percentage points. In the euro area, growth due to transactions was confined mostly to spring 2020, when the temporary soar in liquidity and overdraft loans, and the large volume of government guarantee programmes significantly increased the loan portfolio. The dynamics were characterised by high degree of heterogeneity, and growth was linked mostly to the southern Member States of the European Union. Since March 2020, France, Spain and Portugal realised growth rates over 10 per cent due to transactions. Since the appearance of the coronavirus, loans outstanding declined by 3 per cent in the rest of the Visegrád countries. Accordingly, the Hungarian growth rate is outstanding in a regional comparison.

Growth in loans outstanding can be considered balanced, despite the relatively high rate. At the end of 2020, the distribution of corporations' indebtedness as a percentage of the 2019 EBITDA had not changed substantially compared to January 2020 in the individual sectors (Chart 25). Of the 83 surveyed NACE (TEÁOR) sectors, only the manufacture of textiles registered an increase in the outstanding loan/EBITDA ratio of more than one unit. In addition, in 2020 the change in the corporate sector's indebtedness as a percentage of GDP was average in an EU comparison: while in the southern Member States the index rose by 4 to 8 percentage points

Chart 26: Transactional expansion of corporate loan volume by sector since the appearance of the



Source: MNB





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

due to the sharp fall in GDP and the strong lending dynamics, in Hungary growth remained below 2 percentage points. Accordingly, the corporate sector's indebtedness as a percentage of GDP is still low by international standards; at the end of 2020 it stood at 19 per cent, the sixth lowest value in the European Union.

Broad-based loan growth was registered between March of 2020 and 2021. In the third and fourth quarter of 2020, the corporate loan portfolio expanded by HUF 252 billion and HUF 227 billion, respectively, with growth seen in a wide range of sectors (Chart 26). The highest growth was found in the loan portfolio of the trade and vehicle repair (HUF 143 billion) and real estate (HUF 123 billion) sectors. Primarily as a result of the newly introduced government and central bank loan programmes, SME and forint loan accounted for a major part of the growth: the first grew by HUF 244 billion and the latter by HUF 300 billion in the fourth quarter of 2020, while large corporations' loan portfolio and outstanding foreign currency loans both decreased. In 2021 Q1, the corporate loan portfolio grew by HUF 189 billion, which was also dominated by SME and forint loans.

Despite the measures introduced in autumn to contain the pandemic, lending conditions have not been tightened substantially. While in 2020 Q3, 31 per cent of banks, in net terms, tightened the lending standards, in 2020 Q4 the ratio of those tightening conditions dropped to 6 per cent and 2021 Q1 standards remained constant at the sector level (Chart 27). While no significant tightening has been implemented in any corporate size category, the conditions of commercial property financing were tightened by 17 per cent, in net terms, of the respondent credit institutions in 2021 Q1, due to the uncertain prospects of several segments of the commercial property market. 31 and 47 per cent of the banks, in net terms, reported demand for short-term and long-term loans, respectively, in 2021 Q1, and looking ahead, they expect similar pick-up to take place also in the next half-year. Compared to the 2008 crisis, one major difference is that (apart from 2020 Q2) banks now perceive steadily rising demand for long-term loans even despite the pandemic, whereas from the second half of 2008 until the second guarter of 2013 they typically reported weakening demand.





Source: MNB

Chart 29: Proportion of corporate loans in moratorium by sector



Note: Top ten sectors with the largest corporate loan portfolio, based on data from the credit institutions sector. Source: MNB Despite the pandemic, the volume of new contracts significantly exceeded the value registered in 2019. After the relatively low volume that characterised 2020 Q2, disbursement of new loans significantly rose: in the second half of the year new loans were disbursed in the amount of over HUF 2,000 billion, exceeding the year-onyear volume by 55 per cent (Chart 28). At the same time, some of the new loans were taken out to replace existing loans with lower interest rates, so they did not increase the stock of loans. The government and central bank programmes contributed strongly to the dynamic growth in disbursements. In the second half of 2020, almost 50 per cent of the new loans were connected to FGS and the new government loan programmes have also become dominant actors in the market. FGS Go! has an outstanding role, as two-thirds of the disbursements of SME loans since the beginning of the pandemic have been realised within the framework of the scheme. As a result of the government and central bank loan programmes, the ratio of fixed-interest and forint loans rose substantially within disbursements: while in 2019 they accounted for 24 and 62 per cent of new loans, respectively, in 2020 these ratios were as high as 49 and 80 per cent. In the first guarter of 2021, the total value of loans issued by credit institutions was HUF 854 billion.

In parallel with the recovery of the economy, the volume of outstanding corporate loans participating in the moratorium is gradually declining. While 48 per cent of the corporate loan portfolio participated in the moratorium in June 2020, by the end of the year their ratio fell to 29 per cent (or 39 per cent as a percentage of the eligible portfolio), and thus corporate loans of roughly HUF 2,700 billion participated in the moratorium. Similar to the distribution of the entire corporate loan portfolio by sectors, the largest part of the loan portfolio participating in the moratorium is also comprised of corporations active in the real estate sector (30 per cent), followed by manufacturing (25 per cent) and trade and vehicle repair (11 per cent). The corporations participating in the moratorium to the largest degree usually belong to the hotels and restaurants, arts, entertainment and leisure sectors (Chart 29). The participation ratio is also above average in certain sub-segments of the commercial property financing loans, typically belonging to the real estate sector and bearing utmost importance in terms of banks' risks: the participation ratio is the highest in the hotel segment, with 77 per cent of the outstanding volume, followed by the office (46 per cent) and the shopping centre (46 per cent) segments. The stock of











Note: Central bank loan programmes includes FGS Fix and FGS Go!, while the government programmes include those of EXIM, MFB and the Széchenyi Card. Due to the overlap between the programmes, the volume of each programme should not be added. The loan programmes apply to the entire financial intermediary system. Source: MNB

loans participating in the moratorium fell to the largest degree by December in the case of loans below HUF 10 million and over HUF 5 billion, and the portfolio decreased to the greatest extent for loans with shorter maturity or high interest.

Those who opted out of the moratorium may have also been encouraged by refinancing relying on the favourable interest rate new loan programmes. A company may refinance its loan participating in the moratorium through a discounted government/central bank programme to achieve a lower interest rate. Enterprises that were able to opt out of the moratorium with at least one loan in the second half of the year built a portfolio of new loans of almost HUF 870 billion, of which HUF 350 billion was used by the enterprises within one month after taking the loan to reduce the number of their loans in moratorium (Chart 30). Meanwhile, companies that remained in the moratorium borrowed substantially less than those that opted out of the moratorium. 30 per cent of the outstanding loans of enterprises that fully opted out of the moratorium by December were concluded after the moratorium. However, in the case of enterprises that still participated in the moratorium at the end of the year this ratio was only nearly half of that, i.e. 16 per cent.

The government and central bank loan programmes may substantially support lending dynamics in the future as well. In the second half of 2020, utilisation of subsidised programmes picked up significantly (Chart 31). While at the end of the second quarter the facility utilisation rate was around 20 per cent for most programmes, by the end of the year it became necessary to raise the original budget of several programmes. The largest increase was implemented, in two steps (by HUF 1,000 billion in November and by HUF 500 billion in April) in the FGS Go! budget, which now amounts to HUF 3,000 billion. In addition, new government loan and guarantees programmes aimed at reopening the economy were introduced in the first half of 2021: the Hungarian Development Bank's (MFB) Interest-free Restart Quick Loan and its Growth Guarantee Programme may support reopening the economy by HUF 100 billion and HUF 700 billion, respectively, while EXIM's new "Spin Up Investment Loan" programme may also contribute to faster economic recovery (Box 4). In addition to the foregoing, corporate borrowing is also supported by the Bond Funding for Growth Scheme, within the framework of which corporations which also have bank loans issued bonds in the total amount of almost HUF 530 billion



Chart 32: Size of the government guarantee programmes in the Member States of the European

Note: Based on March 2021 data. As a percentage of 2020 GDP and corporate loans outstanding in 2020 Q4. Source: MNB, IMF, Bruegel





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

between the start of the scheme in July 2019 and February 2021. The outstanding bank loans of the surveyed enterprises declined by merely HUF 70 billion within two months after issuance. Accordingly, as a percentage of the issued volume not more than 13 per cent of the loans may have been refinanced since the start of the scheme.

The budget of the domestic guarantee programmes rose significantly, by HUF 1,700 billion, in the past half-year. In 2020, the Member States of the European Union announced large-scale guarantee programmes with a view to maintaining corporate credit dynamics. The programmes with the largest budgets were announced by Germany, Italy and France, putting them in the forefront also as a percentage of GDP (Chart 32). Since the previous report, the budget of the guarantee programmes have been increased in several countries, with the most distinct shift observed in the Netherlands, Sweden and Hungary. Due to the extended budget in recent months, with its present rate of 6.4 per cent of GDP, Hungary joined the mid-range. Of the Visegrad countries only the Czech Republic has a higher share as a percentage of GDP, while the rate is around 4.5 per cent in Poland and Slovakia.

According to our expectations, growth in outstanding corporate loans may continue. In our forecast, we anticipate no further major supply side tightening in banks' credit supply. According the MNB's Market Knowledge survey, in 2021 domestic banks perceive a kind of waitand-see attitude of SMEs – not only due to the protracted pandemic, but also due to the anticipated receipt of EU funds – which, however, is significantly outstripped by the credit demand increasing effect of the economic stimulus packages. Considering the incoming positive lending data and the decreasing amortisation resulting from the prolongation of the moratorium until June 2021, over our forecast horizon it may fluctuate on average in an almost double-digit positive growth range (Chart 33). Growth in loans outstanding is also supported by the fact that the corporate sector's indebtedness as a percentage of GDP is still low in an international comparison.

BOX 4: IMPACT OF THE GOVERNMENT AND CENTRAL BANK LOAN PROGRAMMES ON EMPLOYMENT IN HUNGARY

With a view to mitigating the credit supply reducing effect of the coronavirus pandemic, government and central bank loan programmes were introduced, the impacts of which on employment are analysed below. In a crisis situation, drastically declining credit supply may significantly impair corporations' access to loans, thereby substantially curbing the rate of recovery for the real economy. With a view to mitigating the economic downturn resulting from the coronavirus pandemic, several programmes were announced, of which – in addition to the moratorium on loan repayments and the guarantee programmes – the central bank and government loan programmes may have been instrumental in preventing a drastic downturn in lending. The effect of the large volume of subsidised loan programmes introduced in spring 2020 – FGS Go!, the Széchenyi Card's new products and the EXIM and MFB programmes – on the real economy can be measured instantly and in the most direct way via the impact of the changes on the employment figures of the beneficiary enterprises.

In order to identify the impact of the subsidised loan programmes, we estimated the counterfactual state, i.e. how the beneficiary enterprises' headcounts could have changed in the absence of the loan programmes. The surplus headcount relative to that may be regarded as the impact of participation in the programmes. On the other hand, it is not possible to observe the counterfactual state, and thus we try to approximate it by matching each beneficiary

(treated) company with a non-participating company (control company) that resembles the treated company the most in all features that determine participation in the programme and changes in headcount. For this purpose, we took into consideration, among other things, the data in the financial statements, the features capturing enterprises' credit demand and creditworthiness, as well as participation in the moratorium and in the wage subsidy schemes. Following this, we examined the impact of the loan programmes on the treated companies and on the control companies matched with them.



As a result of the subsidised loan programmes, companies with a headcount

Note: The averages are weighted according to the weights assigned in the pairings. Source: MNB, NTCA, MIT

of over five persons employed 4 per cent more employees at the end of 2020. Before the start of the programmes (treatment date) the average headcount of the two groups was similar, which implies that before the treatment we did indeed manage to select companies resembling the subsidised ones as control companies. By contrast, after the treatment, a significant difference developed between the two groups of companies. To analyse the effect, we estimated a fixed effect panel regression equation by the difference-in-differences method. The results show that on average, the companies participating in the subsidised loan programmes employed 0.8 person and 4 per cent more employees in December 2020 compared to March 2020, compared to those left out from the programmes.
We also analysed our results in a breakdown by credit scheme, loan purpose and enterprise size, and observed the strongest effects for those participating in FGS Go!, those taking out investment loans and for small enterprises. For the companies taking out investment loans or FGS Go! loans, the subsidised programmes increased the headcount by around 1.5 persons or by 6 and 5 per cent, respectively, by December 2020, while the effect for small enterprises was 0.7 person or 4 per cent. The headcount effect measured at those taking out a working capital loan and for micro and



Note: In the figure, the solid line represents the point estimates of the coefficients. The line is dotted for the periods for which the values of the outcome variable are not original observations but are obtained by interpolation. The darker and lighter bars represent the 95% and 99% confidence intervals respectively. Source: MNB, NTCA, Ministry of Innovation and Technology

medium-sized enterprises is less pronounced, but still significantly positive. For companies with a headcount below five persons, we have data up to June 2020; accordingly, the analyses related to them measure only the initial effect of the loan programmes, nevertheless they confirm our main results. A positive significant effect can be observed by June 2020 at companies taking out subsidised investment loans (surplus of 0.5 person or 3.5 per cent), those participating in FGS Go! (surplus of 0.9 person or 2.9 per cent) and for small enterprises (surplus of 0.3 person or 0.2 per cent). For the other sub-groups and the entire set, the surplus headcount increases, but is not significant in statistical terms.

The loan programmes may have generated substantial additional lending. In our main results, we implicitly assumed significant additionality in borrowing by the fact that only 10 per cent of the control companies drew down marketbased loans in the period under review. Credit demand and creditworthiness, as key factors in terms of borrowing and employment, are latent and difficult-to-identify variables, which may have changed abruptly at some of the companies during the period under review. Due to this, we also examined our main results excluding this external additionality by selecting control companies from the set of companies that took out market-based loans in the period under review. In this case, we can see a significant positive effect (surplus of 1 person or 3 per cent) only at companies with investment loans, while no significant effect was identified at companies with working capital loans and for the full sample model. The significant part of the surplus headcount presented in our main results is attributable to the fact that we identify the vast majority of subsidised borrowings as additional borrowing encouraged by the programmes. While part of that presumably would have also materialised in the absence of the new loan programmes, the programmes may have entailed substantial additional lending due to their favourable terms. They may have made projects profitable or brought them forward in time, moreover, banks' credit supply may have also broadened substantially as a result of the programmes' incentives and the risk sharing through the guarantee programmes.

In the entirety of the subsidised loan programmes, we identified major headcount increasing effect. At the end of 2020, companies taking out subsidised loans with a headcount over five employed 4 per cent more employees than similar companies not taking advantage of the loan programmes. The strongest effect can be identified at companies participating in FGS Go!, those taking out investment loans and for small enterprises. A larger part of the headcount surplus is presumably attributable to the additional borrowings resulting from the expanding credit demand and supply effect of the programmes.



Chart 34: Household loan transactions of credit institutions

Source: MNB

Chart 35: New household loans in the credit institution sector



Note: Loan refinancing indicates only refinancing related to the early repayment scheme and the FX conversion. Other consumer loans include vehicle loans and hire purchase and other loans, without prenatal baby support loans. Source: MNB

3.2 Households' indebtedness is low at the sector level, but monitoring certain debtor segments with strained financial situations is justified

The payment moratorium continues to support growth in household loans outstanding. As a combined result of disbursements and repayments, household loans outstanding rose by HUF 1,028 billion in 2020, and thus the annual growth rate reached 14.5 per cent (Chart 34). This growth, which can also be deemed outstanding even in an international comparison, was also strongly bolstered by the instalment-reducing effect of the payment moratorium, in the absence of which credit growth would have been roughly 8 per cent. In December 2020, 54 per cent (roughly HUF 3,400 billion) of the eligible household loans participated in the moratorium, involving 1.4 million clients. Prenatal baby support loans accounted for more than one half of the annual increase in the portfolio, and amounted to 13 per cent of household loans outstanding at the end of 2020. In 2021 Q1, household loans outstanding increased by HUF 213 billion, translating to a somewhat slower, but in an international comparison still outstanding, annual growth rate of 13.7 per cent. However, excluding the effect of the moratorium would result in a significantly lower estimated growth rate of 5 per cent.

The coronavirus crisis had the greatest effect on the disbursement of unsecured consumer loans. In 2020, banks concluded loan contracts with retail customers in the amount of HUF 2,204 billion, which falls short of the value registered a year ago by 9 per cent (Chart 35). Although disbursements of housing loans increased by 2 per cent year-on-year, the volume of new contracts for personal loans in 2020 contracted by 40 per cent compared to the previous year. Demand for prenatal baby support loans remained significant even despite the pandemic. Contracts concluded under this scheme accounted for almost 30 per cent of annual disbursements. In the final guarter of 2020, every third newly concluded household loan contract was statesubsidised, with the prenatal baby support loans playing a key role in this. New disbursements still fell short of the pre-crisis level in 2021 Q1: the loan volume of HUF 536 billion was 15 per cent lower than the pre-crisis level of 2020 Q1. Personal loans showed a significant year-on-year decline of 28 per cent in 2021 Q1. However, after the introduction of personal loans for home renovation in the

Chart 36: Changes in the disbursement of new personal



Note: CFPL: Qualified Consumer-friendly Personal Loan. *Volumeweighted average APRC of credit institutions' disbursement. Source: MNB



Chart 37: Characteristics of the new personal loans

Note: * At least 8-year maturity. ** At least HUF 3 million contract size. Source: MNB

supply of several credit institutions, disbursements in March returned to pre-pandemic levels, in which the prefinancing of the home renovation support may also play a role. In the case of housing loans, the decline compared to the previous year was only 4 per cent, following partly from the historically high March disbursement of housing loans (HUF 104 billion), which reflects the postponed strong demand resulting from the family support subsidies launched in January 2021, together with the longer execution time of mortgage loans.

The volume of personal loan disbursements dropped by almost one half as a result of the coronavirus pandemic. The disbursement of personal loans, which during the prepandemic period usually amounted to HUF 40-50 billion per month, fell to HUF 20-25 billion per month as a result of the increased uncertainty due to the pandemic and the fall in risk appetite (Chart 36). In our view, apart from the temporary interruption related to initial product development, the cap introduced on the annual percentage rate of charge (APR) has not curbed the disbursement of loans due to the temporary nature of the measure. The limited impact of the preferential APR on lending can also be confirmed by the fact that no tangible shift can be observed in the APR in January 2021 following the termination of the APR cap in comparison with the level of the APR before March 2020. After the end of the pandemic, a gradual recovery in the personal loan market may be expected, in which also the Qualified Consumerfriendly Personal Loans (CFPL) - available already from January 2021 - may have a dominant role as well. The CFPL products already achieved a market share of about 15 per cent in the disbursement of new personal loans soon after their launch in January.

The characteristics of personal loan contracts concluded by credit institutions in 2020 differ substantially from those issued a year ago. In 2020 Q2, the ratio of lowincome borrowers, who thereby have less access to loans, declined sharply: while at the end of 2019 the ratio of customers with income below the median was 22 per cent in this market, in 2020 this ratio was typically 12-15 per cent (Chart 37). The ratio of transactions concluded with a debt-service-to-income ratio (DSTI) of over 40 per cent – indicating relatively high income tightness – fell from 32 per cent to 27 per cent during the same period. The ratio of long-term loans, with maturity of at least 8 years, did not change significantly. Nevertheless, the ratio of highamount loans, with a minimum of HUF 3 million, declined.



Chart 38: Changes in credit conditions and credit demand in the household segment

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

Table 2: Effects of the introduced home creation subsidies

| Measure | Demand of non- subsidised housing loans | Demand of subsidised housing loans | Demand of unsecured loans |
|---|---|---|---------------------------------|
| 5 per cent VAT on new homes instead of 27 per cent | 仓 | 仓 | 仓 |
| VAT on new home purchases with HPS is reimbursable | 仓 | | 仓 |
| Preferential stamp duty: New and used home purchases with HPS are levy-free | | 仓 | |
| Multigenerational HPS Scheme: Max. 10 M HUF subsidy for attic refurbishment | | | 仓 |
| Home renovation support: 50 per cent, max. 3 M HUF, for families with minimum one child | Ŷ | | 仓 |
| Home renovation preferential loan: max. 6 M HUF, 3 per cent interest rate, max. 10 years, for families with minimum one child | ₽ | | |

Note: Dark blue colour depicts stronger effects, light blue depicts lighter, less pronounced effects. Source: MNB

Home creation subsidies introduced in January 2021 boost demand for household loans. According to the responses given in the Lending Survey, the majority of banks tightened conditions on both housing loans and personal loans following the onset of the pandemic, meanwhile they observed a fall in demand (Chart 38). In 2020 H2, there was no substantial change in credit standards. However, in 2021 Q1, banks eased conditions on both housing loans and personal loans, 20 and 52 per cent of banks in net terms, respectively. A large portion of banks also reported a pick-up in credit demand in 2021 Q1, and looking ahead, they also expect stronger demand for both products in the second and third quarters, also bolstered by the new home creation subsidies (home renovation support, home renovation preferential loan, preferential stamp duty, VAT refund) through their additionality effect on credit demand.

The effects of the home creation subsidy measures may vary in the individual market segments. The home creation subsidy measures introduced in early 2021 boost lending, but their impact on the individual market segments may be of different direction and intensity (Table 2). The cutting of VAT on new homes may ease supply constraints in the new home market, and thus demand postponed earlier for lack of supply may appear, but the degree of the measure's price-reducing effect is uncertain. Growth in demand may also affect unsecured loans, as customers tend to use these products for housing purposes as well. The exemption from VAT and stamp duty - applicable to those making their purchase under HPS - represents a proportionally smaller amount, and it may rather increase demand for subsidised housing loans. The multigenerational HPS is aimed at a narrow segment, and as such its aggregated impact may remain limited. The home renovation support and/or preferential loan may substitute part of the unsecured loans and most of the market-based housing loans taken out for home renovation purposes. This is because housing loans for renovation purposes account for merely 4 per cent of all housing loan disbursements, and 60 per cent of the contracted loan amounts did not exceed HUF 3 million. On the other hand, a major additional impact may appear for those who finance the subsidy with a market-based unsecured loan and in the absence of the subsidy would have not started the renovation. Moreover, in the case of unsecured consumer loans - contrary to the subsidised loans - it is not necessary to register a mortgage on the property. Accordingly, on the whole, demand is expected to grow in this segment.







Chart 40: Debt-to-income ratio of the household segment



The growth rate of household lending may remain in the double-digit range, despite the negative economic effects of the coronavirus pandemic. In addition to the payment moratorium, which was prolonged until June 2021, and the state-subsidised credit schemes, lending to households may also be supported in the short run by recovering credit demand. Demand for prenatal baby support loans has remained strong, despite the deteriorating economic environment. This is partly due to the fact that the product is typically applied for by borrowers of higher income and level of education, who are also less affected by the pandemic in labour market terms. On the other hand, it is also attributable to the particularly favourable conditions of the prenatal baby support loans, the related state guarantee and the loan purpose linked directly or indirectly to housing, which are influenced by lenders' and borrowers' precautionary considerations to a lesser degree. Based on the MNB's Market Intelligence survey, according to the expectations of domestic banks, by the end of 2021 outstanding prenatal baby support loans may increase by almost 50 per cent, to over HUF 1,500 billion. Considering the moratorium until June 2021 and the protracting pandemic, household loan dynamics may decelerate close to 10 per cent by early 2022 (Chart 39). According to the current regulation, prenatal baby support loan contracts may be concluded until the end of 2022. Therefore, the disbursement of new loans in 2023 may be more moderate.

In contrast to the 2008 crisis, households entered the coronavirus crisis with stronger balance sheet. While in the European Union as a whole, the debt burden of the household sector has hardly decreased since the 2008 economic crisis, Hungarian households' debt-to-income ratio stood at a much lower level at the start of the coronavirus pandemic compared to 12 years earlier (Chart 40). This is the combined result of the favourable income trends and protracted deleveraging in relation to the debt accumulated during the previous credit cycle. The effective debt cap rules also efficiently curb overindebtedness: 80 per cent of the currently outstanding household debt (70 per cent of the mortgage loans) were contracted in accordance with these rules. In addition, the predictability of instalments is supported by the penetration of fixed-rate loans: within the newly disbursed loans floating rate and up to 1 year initial rate fixation has practically ceased, while in the outstanding portfolio the ratio of those is 30 per cent (40 per cent in the case of mortgage loans). Accordingly, at present the debt burden to income of the household sector as a whole



Chart 41: Distribution of bank retail customers by their debt-to-income ratio

Note: The total debt to annual income ratio was estimated among bank customers with wage credits in December 2019 on the basis of their annual average debt in December 2020 and their average wage credit in 2020 Q4. Source: MNB

Chart 42: DSTI distribution of mortgage loans disbursed in 2019 and deterioration in the borrowers' labour market position



Note: Ratio of moderately or significantly deteriorating labour market status due to the coronavirus in the case of main earners (only those with loans). Source: MNB, Moratorium Survey (2021 March)

is lower than after the 2008 economic crisis. However, the sector-level picture may conceal major differences at the ₈₀ level of individual social segments.

⁷⁰ The indebtedness of households is low on the whole; 60 however, roughly one tenth of them can be deemed 50 significantly indebted. Based on the data of banks' ⁴⁰ customers with wage credits and loans at the end of 2019, 30 the outstanding debt of the vast majority of household 20 clients compared to their annual income is low (Chart 41). 10 60 per cent of the borrowers have an outstanding loan in an amount below their annual income. Customers whose total debt is four times higher than their annual income can be deemed potentially vulnerable. In December 2020, the ratio of these customers was almost 10 per cent. The moratorium on payments provides significant help to customers with high debt -to-income ratios in offsetting potential liquidity strains. This is implied by the fact that among these clients the ratio of those participating in the moratorium is almost three times higher compared to those that continue to pay the instalments.

In certain socio-economic groups, the deteriorating labour market situation is accompanied by higher debtservice burdens. The balance sheet of households is stable on the whole. Nevertheless, certain borrower groups may be more vulnerable than the average. Due to this, we examined the development in their labour market position and the distribution of the debt-service-toincome ratio (DSTI) of borrowers that took out a mortgage loan in the year preceding the coronavirus crisis¹³ (Chart 42). Since the onset of the pandemic, a large portion of borrowers perceived a deterioration in their labour market situation. This was perceived to a much larger degree by certain groups, such as young people and those participating in the moratorium. In addition, in certain debtor segments a higher - over 40 per cent - DSTI is more frequent, for example in the case of those participating in the moratorium or living in the capital. Although the moratorium provides protection for its duration, after its end a potential deterioration in the labour market situation may pose problems, particularly in segments with higher indebtedness.

A substantial part of the population has low savings. Half of the Hungarian population have savings that cover not more than one month's expenditure, which increases their vulnerability in the event of a protracted crisis. The picture is rather heterogeneous in the case of those with

¹³ No information is available on the development of income of debtors who have drawn down loans before 2019.



Source: EU SILC, MNB Moratorium Survey, (2020 August and 2021 March)

Chart 44: Utilisation of remaining instalments as a result of the moratorium



Note: More than one answer was possible. Source: MNB, Moratorium Survey (2021 March)

loans: According to the MNB's survey, the reserves of those who took advantage of the moratorium are lower than that of the entire population (Chart 43). By contrast, the situation of those loan debtors who opted out of the moratorium is more favourable, as only a quarter of them have savings that cover not more than one month's expenditure. The savings situation also did not change significantly between the MNB's August 2020 and March 2021 surveys for those participating in the moratorium or for those opting out of it.

The temporary suspension of payments provides significant help for some of those participating in the moratorium. Although 20 per cent of those participating in the moratorium save or invest the amount left due to omitted instalments, and 7 per cent of them use it for the prepayment of their outstanding loan, the vast majority almost two-thirds of them - said that they financed their basic living costs from it (Chart 44). This latter ratio is even higher, at 86 per cent, among those who believe that in the absence of the moratorium they would have not been able to pay their loan instalments at all (30 per cent). According to the estimate based on the survey data of March 2021, debtors in a tighter financial situation, young people, families with more children and households recently facing borrowing constraints were more likely to participate in the moratorium (Box 5).

BOX 5: MOTIVES OF HOUSEHOLDS FOR PARTICIPATING IN THE MORATORIUM

Debtors participating in the moratorium "obtain" an additional amount corresponding to their instalment each month during the period spent in the moratorium compared to the repaying the loan according to the original schedule. Thus, participation in the scheme may also be regarded as a kind of borrowing: the debtor will pay for the additional liquidity received in the present with the instalments falling due during the extension of the maturity later on. Pursuant to the rules of the scheme, this maturity extension will be longer than the period spent in the moratorium.

If the moratorium is construed as borrowing, the economic theories related to the motives for borrowing and consumption can be tested. The central thought of the relevant theories is that households smooth their consumption by borrowing, and thus the consumption characterising the respective period is adjusted not to the income earned in that period, but rather to a longer-term "permanent" income. Based on this, borrowing – and participation in the moratorium – may be typical for those in the younger age groups, or whose income declined only temporarily and is likely to increase in the future, where the interest rate of the loan is lower and those who give preference to current consumption over future consumption. Prevention of potential delinquency in the future may also be an important motive: the liquidity accumulated during the moratorium can also be used for debt servicing after expiration of the scheme, and thus debtors have better chance to avoid the costs entailed by delinquency (e.g. enforcement proceeding,

losing their home). This motive may be more typical for those who might find themselves in a tight financial situation due to the pandemic.

Based on previous empirical analyses, credit demand may also be substantially influenced by loan supply constraints and the composition of households. Studies that tested consumption theories found that the consumption of households depends to a much larger degree on their *current* income than could be expected based on the aforementioned theory. One reason for this is that households are faced with credit supply constraints, i.e. they do not have unlimited access to the credit market, for example, when their current income is low or they are temporarily unemployed. In addition, consumption and thus credit demand is also strongly influenced by the composition of the household, e.g. the number of children.

In order to explore the motives of participating in the moratorium, using survey data¹⁴ we estimated a linear probability model, where the target variable was whether the debtor participated in the scheme. By doing so, we can examine the role of the individual independent variables in decision-making while also controlling for the effects of other variables, complementing the research that is based on the descriptive analysis of statistics and distributions.¹⁵

| Explanatory variable | Coefficient | p-value | Explanatory variable Coefficient | | | | |
|---|-----------------|---|---|-----------------|-------|--|--|
| The respondent understands how the moratorium works (1-Yes) | 0.05 | 0.00 | Household income (reference: below HUF 200,000) | | | | |
| Willingness to save (1-Yes) | -0.03 | 0.00 | HUF 200.000 – 300.000 -0.08 | | | | |
| Main earner's age (reference: 18-34 years) | | • | HUF 300,000 – 400,000 | -0.14 | 0.00 | | |
| 35-44 years | -0.05 | 0.00 | HUF 400,000 – 500,000 | -0.19 | 0.00 | | |
| 45-54 years | -0.06 | 0.00 | HUF 500,000 – 750,000 | -0.25 | 0.00 | | |
| 55-64 years | -0.09 | 0.00 | HUF 750,000 – 1,000,000 | -0.28 | 0.00 | | |
| 65 years and over | -0.11 | 0.00 | above HUF 1,000,000 | -0.31 | 0.00 | | |
| Number of children (reference: no child) | | | Savings (reference: less than 3 months) | | | | |
| One child | 0.04 | 0.00 | Covers more than 3 months | -0.05 | 0.00 | | |
| Two children | 0.05 | 0.00 | 0 Change in income since the outbreak (reference: deteriorated) | | | | |
| Three or more children | 0.11 | 0.00 | 0.00 No substantial change -0.14 | | | | |
| Debt-to-income (reference: 0-20%) | | Improved -0.07 (| | 0.00 | | | |
| 21-40% | 0.06 | 0.00 Expected change in financial situation over the one year ahead | | | | | |
| More than 40% | 0.12 | 0.00 | 0.00 (reference: expected to deteriorate) | | | | |
| Loan product (does the household have a loan of t | he following ty | /pes?) | No substantial change expected | 0.06 | 0.00 | | |
| Housing loan | -0.06 | 0.00 | Expected to improve | 0.10 | 0.00 | | |
| Personal loan | 0.14 | 0.00 | Any rejected loan applications in the past two year | rs (reference: | | | |
| Other loans | | | Submitted applications, no rejections) | | | | |
| Has more than 1 loan | 0.05 | 0.00 | No loan applications | 0.02 | 0.00 | | |
| Outstanding principal debt (reference: below HU | F 500,000) | | Granted a lower amount than requested | 0.05 | 0.00 | | |
| HUF 500,000 – 1,000,000 | 0.00 | 0.68 | No application submitted because the bank would have rejected it | 0.11 | 0.00 | | |
| HUF 1,000,000 - 3,000,000 | 0.07 | 0.00 | Rejections occurred | 0.08 | 0.00 | | |
| HUF 3,000,000 – 5,000,000 | 0.11 | 0.00 | Sector (is there a household member working in the f | ollowing sector | ors?) | | |
| HUF 5,000,000 – 10,000,000 | 0.16 | 0.00 | Accommodation and food service activities | 0.07 | 0.00 | | |
| HUF 10,000,000 - 20,000,000 | 0.23 | 0.00 | Arts, entertainment and recreation | 0.06 | 0.00 | | |
| above HUF 20,000,000 | 0.33 | 0.00 | Other sectors | | | | |

Estimating the motivations for staying in the moratorium by a linear probability model (dependent variable: the household is participating in the moratorium)

Note: Several variables included in the estimation (the intercept, a portion of the variables describing the type of the debtor's loans, a significant share of the dummy variables indicating the sector classification of household members' occupation, bank control variables, the dummy control variables indicating the debtor's county and the category variable specifying the settlement type of the debtor's place of residence) are not included in the table due to lack of space. The coefficients show the given variable's effect on the increase in the probability of participating in the scheme, ceteris paribus. Printed in bold are the results that are significant even at a significance level of 1 per cent. N = 40,033, $R^2 = 0.238$. Source: MNB

¹⁴ The questionnaire was filled in by households with at least one loan which was eligible for the moratorium in the second half of March 2021. For the estimation we used the responses of roughly 40,000 households.

¹⁵ For the descriptive presentation of the participants in the moratorium, see: Drabancz et al. (2021): Experiences with the Introduction of a Payment Moratorium in Hungary. Financial and Economic Review, March 2021, pp. 5-42.

Our results confirm most of our preliminary assumptions. Younger generations are more likely to participate in the moratorium: debtors over 65, ceteris paribus, were about 11 percentage points more likely to opt out of the scheme than the age group of 18-34 years. Debtors with families – particularly with three or more children – were more likely to participate in the moratorium, as in their case the likelihood of staying in the scheme was 11 percentage points higher compared to households without children. Debtors giving a relatively higher preference to consumption over savings were more likely to participate in the scheme, which was assessed based on the questions related to the respondents' financial attitude in the questionnaire. Debtors in a financially tight situation – i.e. those with a higher debt-service-to-income ratio, higher debt, lower income or smaller savings, and those whose income position deteriorated since the onset of the pandemic – were also more likely to suspend instalments. For example, households whose savings were sufficient to cover the consumption of 3 months or less, were 5 percentage points more likely to stay in the scheme, while households with a monthly income of at least HUF 1 million were 31 percentage points more likely to opt out of the moratorium than those with income below HUF 200,000. Debtors employed in sectors hit particularly hard by the pandemic (accommodation, arts, entertainment) were also more likely to participate in the scheme. On the other hand, our interest-related hypotheses were not proved: those with personal loans featuring high interest rates were much more likely to remain in the scheme even after controlling for the specific characteristics of these debtors in the model with a number of other explanatory variables.

The scheme was also used by a larger proportion of those who were recently faced with loan supply constraints. The questionnaire also revealed whether debtors had any demand for a loan in the past two years and to what extent this demand had been satisfied. According to our estimate, it increased the probability of remaining in the moratorium if in the past two years the debtors had been unable to satisfy their credit demand or had been able to satisfy it only partially. The probability of remaining in the scheme increased to the largest degree when the debtors said that although they would have had credit demand, but they had known from the outset that the bank would reject it and thus they had not submitted the loan application. The probability of these debtors remaining in the moratorium was 11 percentage points higher compared to those whose credit demand was fully satisfied.

On the whole, we found that debtors in a tighter financial situation, younger borrowers and families with several children were more likely to participate in the moratorium. On the other hand, the moratorium also provided an opportunity to those who wanted to increase their consumption from the additional liquidity. Through the scheme even those households had access to additional funding that otherwise presumably would have not been eligible for loan due to loan supply constraints.

4 Portfolio quality: the increase in credit risks was reflected in loan loss provisioning

In 2020, the banking sector's non-performing loan portfolio declined further in both the corporate and household segments. This process is strongly supported by the payment moratorium, which was introduced in March 2020. Consequently, the historically low non-performance indicators do not provide a full picture of the quality and riskiness of the loan portfolio. Mounting credit risks are indicated by the increase in the ratio of Stage 2 loans as well as the rise in loan loss coverage. The average degree of coverage increased in both the corporate and household segments, in all loan loss categories as well as in the case of loans in and outside the moratorium. In 2020 H2, banks experienced a greater increase in credit risk in the case of loans in moratorium, which is reflected in the Stage reclassifications as well as in the rise in average loan loss coverage.

According to the estimation of future non-payment risks based on micro level data, 12 per cent of the total corporate loan portfolio can be considered particularly risky. One half of this consists of corporate loans in moratorium, belonging to financially stressed – i.e. indebted and illiquid – companies operating in vulnerable sectors, and one half is comprised of loans in moratorium, although not in vulnerable sectors, but in especially stressed situations. With regard to household loans outstanding, the loans in moratorium of those who are employed in vulnerable sectors account for 10 per cent of all the loans outstanding. According to the MNB's survey, on the basis of self-declaration, 30 per cent of the retail clients in moratorium would have been unable to pay their instalments in 2020, and 60 per cent of them do not plan to leave the programme as long as it is available.



Chart 45: 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 the loans over 90 days past due, loans less than 90 days past due where non-payment is likely are also classified as nonperforming. Calculated by clients until 2010 and by contracts from 2010. Source: MNB

4.1 Based on loan loss provisioning, banks expect an increase in credit risk

In 2020, the ratio of non-performing loans declined further in both the corporate and household segments. During 2020, corporate and household loans 90 days past due fell by HUF 41 billion and HUF 51 billion, respectively (Chart 45). Up until the introduction of the payment moratorium, following a gradual decline, the ratio of nonperforming corporate loans (NPL ratio) had decreased to 3.5 per cent and then remained at this level. Loans that were not more than 90 days past due, but were problematic accounted for some 74 per cent, i.e. for most of the non-performing corporate loans. Non-performing household loans amounted to HUF 250 billion at the end of the period under review, with loans 90 days past due accounting for 58 per cent. Following a 1.1-percentage point annual decline, households' NPL ratio fell to 3 per cent by December 2020. This decline was supported by the expanding loan portfolio and continuous portfolio cleaning, whereas in the case of companies all of this was partly offset by the deterioration of portfolio quality due to the pandemic.



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

Chart 47: Changes in loan loss provisioning of the corporate loan portfolio in 2020



Note: Credit institutions sector. Stage 1: loan loss provision for financial assets whose credit risk has not increased significantly since initial recognition. Stage 2: loan loss provision for financial assets whose credit risk has increased significantly since initial recognition but there has not been any event that objectively caused any loan loss. Stage 3: loan loss provision for non-performing financial assets. Source: MNB

Chart 48: Changes in loan loss provisioning of the household loan portfolio in 2020



Note: See the note of the previous chart. Source: MNB

Banks perceive increasing credit risk in the loan portfolio as a whole. The loan loss coverage of credit institutions' portfolio as a whole rose from 3.1 per cent to 3.5 per cent during 2020 (Chart 46). This is the result of 3.3-per cent and 3.7-per cent coverage of household and corporate loans, respectively. The rise in loan loss provisioning reflects the credit risks that may potentially materialise after expiration of the moratorium. This is also shown by the continuous increase in Stage 2 loans within the total portfolio, which moved from 11 per cent at the beginning of the year to 18 per cent by end-December.

Loan loss provisions of the corporate loan portfolio rose considerably. After annual growth of nearly HUF 100 billion, provisions for corporate loans outstanding amounted to HUF 345 billion at end-2020, corresponding to an increase of some 40 per cent (Chart 47). The expansion of loan loss provisioning affected all the three Stage categories. Loan loss provisions for the Stage 2 category increased to the greatest extent, more than tripling. The loan loss provision of HUF 52 billion reversed in connection with phase-outs and write-offs was offset by the loan loss provisioning originating from the higher credit risks caused by the coronavirus and by the provisions due to originations and purchases, which jointly resulted in a rise of HUF 166 billion.

Banks expect an increase in credit risk in the household segment as well. In 2020, loan loss provisioning for the household loan portfolio rose by HUF 44 billion, corresponding to an annual expansion of 20 per cent (Chart 48). Loan loss provisions for the Stage 2 category nearly tripled in a year, indicating a significant increase in credit risk. At the same time, loan loss provisions for nonperforming assets declined by some 20 per cent. Loan loss provisions were reduced by HUF 40 billion by phase-outs and write-offs, while they were increased by HUF 73 billion and HUF 27 billion by the rise in credit risk as well as by originations and purchases, respectively.

The credit risk of corporate and household loans in moratorium increased sharply in 2020 H2. Loan loss coverage and Stage classifications provide information about the current and the expected future riskiness of loans outstanding. The examination of such is particularly necessary due to the payment moratorium. During the period of the moratorium, provisioning may provide an indication concerning changes in debtors' debt servicing capacity and present a basis for identifying riskier loans outstanding. At end-2020, 41 per cent of the corporate loan portfolio in Stage 2 or Stage 3 belonged to companies Table 3: Movements of corporate loans between loan loss categories between 2020 Q2 and 2020 Q4

| | Loans | in moratori | um | | |
|-----------------------------|----------|-----------------------------|---------|---------|--------|
| In proportion to the corpor | Impairme | | | | |
| portfolio in moratori | um | Stage 1 | Stage 2 | Stage 3 | Total |
| Impairment category 2020 | Stage 1 | 52.2% | 19.0% | 0.4% | 71.6% |
| | Stage 2 | 4.1% | 18.5% | 1.2% | 23.8% |
| Q2 | Stage 3 | 0.0% | 0.0% | 4.6% | 4.6% |
| | Total | 56.3% | 37.5% | 6.2% | 100.0% |
| | | | | | |
| | Loans no | ot in morato | orium | | |
| In proportion to the corpor | ate loan | Impairment category 2020 Q4 | | | |
| portfolio not in morato | Stage 1 | Stage 2 | Stage 3 | Total | |
| Immeirment esteren (2020 | Stage 1 | 81.2% | 5.5% | 0.1% | 86.8% |
| Q2 | Stage 2 | 4.4% | 6.4% | 0.3% | 11.2% |
| | Stage 3 | 0.2% | 0.0% | 1.8% | 2.0% |
| | Total | 85.9% | 11.9% | 2.2% | 100.0% |

Note: Credit institutions data. Ratios on the basis of outstanding amounts at the end of 2020 Q4. Source: MNB

Table 4: Movements of household loans between loan loss categories between 2020 Q2 and 2020 Q4

| | Loans | in moratori | ium | | |
|-----------------------------|-----------|-----------------------------|--------------|---------|--------|
| In proportion to the house | nold Ioan | Impairment category 2020 Q4 | | | |
| portfolio in moratori | um | Stage 1 Stage 2 Stage 3 | | | Total |
| Imme imme at eater any 2020 | Stage 1 | 68.7% | 13.5% | 0.1% | 82.3% |
| | Stage 2 | 1.7% | 12.0% | 0.1% | 13.7% |
| Q2 | Stage 3 | 0.0% | 0.2% | 3.8% | 4.0% |
| | Total | 70.4% | 25.7% | 3.9% | 100.0% |
| | | | | | |
| | Loans n | ot in morate | orium | | |
| In proportion to the househ | nold Ioan | Impairm | ent category | 2020 Q4 | |
| portfolio not in morato | orium | Stage 1 | Stage 2 | Stage 3 | Total |
| Imme imme at eater any 2020 | Stage 1 | 84.3% | 3.9% | 0.1% | 88.2% |
| Q2 | Stage 2 | 1.5% | 7.1% | 0.1% | 8.6% |
| | Stage 3 | 0.0% | 0.0% | 3.1% | 3.2% |
| Total 85.8% 11.0% 3.2% 100 | | | | | |

Note: Credit institutions data. Ratios on the basis of outstanding amounts at the end of 2020 Q4. Source: MNB





Note: Credit institutions' data. Moratorium participation is based on the 2020 Q4 status. Average coverage of non-terminated contracts in the same impairment category in the two periods. Source: MNB

operating in vulnerable sectors, which is twice as high as the vulnerable share within all loans outstanding. In 2020 H2, significant unfavourable movements in terms of credit risk were observed in both sectors between loan loss categories (Table 3, Table 4).¹⁶ In the case of corporate loans in moratorium at end-2020, on a volume basis, the shares of Stage 2 and Stage 3 loans rose nearly 14 points and 1.5 percentage points, percentage respectively, while in the case of household loans the Stage 2 stock increased by 12 percentage points, and the Stage 3 stock was stagnant. At end-2020, no major change was observed in the distribution according to loan loss categories in the case of loans not in moratorium, i.e. in the case of loans in moratorium banks experienced a greater increase in credit risk in 2020 H2. It is also seen that within the loan portfolio in moratorium the share of Stage 2 and Stage 3 loans, whose risk is elevated, significantly exceeds the corresponding share of loans not in moratorium, with contributions by the changes in the period under review as well.

In the case of corporate and household loans in moratorium, the average loan loss coverage ratio rose in all loan loss categories in 2020 H2. In the case of nonterminated corporate and household loans in the same loan loss categories, the average loan loss coverage ratio increased slightly both in 2020 Q2 and Q4 (Chart 49). In 2020 H2, the average coverage ratios in the case of Stage 2 corporate and household loans in moratorium increased by 1.1 and 2.2 percentage points, respectively, while the increase for Stage 3 loans was 3.5 and 0.1 percentage points, respectively. With regard to the loan portfolio not in moratorium, the average loan loss coverage of Stage 2 corporate loans was stagnant and that of Stage 2 household loans rose by 1.3 percentage points, while in the case of Stage 3 loans in the two sectors increases of 2.1 and 0.8 percentage points, respectively, were observed. The average loan loss coverage of Stage 1 loans was rose slightly or stagnated in the period under review in both sectors. The average coverage of the loans in moratorium in both the corporate and household segments is higher in Stage 2, but in the case of Stage 3 loans the average coverage outside the moratorium significantly exceeds that of the loans in moratorium: it is higher by more than 20 per cent for companies and by more than 10 per cent for households. This is related to the fact that the ratio of delinquent loans is higher in the case of loans not in moratorium



Chart 50: Loans of vulnerable companies in moratorium by liquidity position and indebtedness as a share of total

Liquidity position

Note: Indebtedness: debt/EBITDA; low when below 1, moderate when between 1 and 4, high when over 4 or negative. Liquidity position: personnel costs/funds; adequate below 0.5, moderate between 0.5 and 2. weak above 2. Based on 2019 tax declarations and end-2020 credit data. Source: MNB, NTCA

Chart 51: Loans of companies in moratorium not belonging to vulnerable sectors by liquidity position and indebtedness as a share of total corporate credit



Note: Indebtedness: debt/EBITDA; low when below 1, moderate when between 1 and 4, high when over 4 or negative. Liquidity position: personnel costs/funds; adequate below 0.5, moderate between 0.5 and 2. weak above 2. Based on 2019 tax declarations and end-2020 credit data. Source: MNB, NTCA

4.2 12 per cent of the corporate, and 10 per cent of the household loan portfolio can be considered highly risky

The loans of companies that are in moratorium, operate in vulnerable sectors and are also financially stressed account for 6.1 per cent of the total loan portfolio. It is true in the third wave of the pandemic as well that companies operating in certain (vulnerable) sectors are more sensitive to the economic effects of the pandemic and the related restrictive measures. Defining these vulnerable debtors took place according to the methodology described in Box 6. Of the companies in vulnerable sectors, the ones in moratorium are worth increased monitoring in terms of portfolio quality deterioration. Companies in moratorium and operating in vulnerable sectors account for 11 per cent of corporate loans outstanding (Chart 50). It is true for more than half of these loans that the debtor company is either moderately/significantly indebted,¹⁷ or its liquidity position is not adequate, and thus it can be considered financially stressed. On the whole, examining the companies operating in vulnerable sectors, 6.1 per cent of the total corporate loan portfolio can be considered highly risky.

Companies that are in moratorium and operate in nonvulnerable sectors, but are considered risky because of their significant financial tightness account for 5.5 per cent of total loans outstanding. In view of the pandemic and the ensuing protracted crisis, it is becoming increasingly important to also monitor the companies that operate in non-vulnerable sectors. In spite of the fact that the companies operating in these sectors were not hit the hardest and directly by the economic consequences of the pandemic, we regard those that are in moratorium and may be considerably stressed financially, i.e. are significantly indebted and are in a weak liquidity position, to be particularly risky. Companies that operate in nonvulnerable sectors but are considered particularly risky account for 5.5 per cent of all loans outstanding (Chart 51). Accordingly, on the whole, 11.6 per cent of the total loan portfolio is considered highly risky, with companies operating in vulnerable and non-vulnerable sectors each accounting for around half of this. With the expiration of the moratorium period, credit risk has the greatest probability to materialise among these loans.

¹⁶ It is important to mention that reclassifications may have been affected by the MNB's 2021 guidance as well, which stipulated that loans in moratorium for at least 9 months must be classified into the Stage 2 category, with certain exceptions.

¹⁷ See the notes below Charts 50 and 51 for the definition of the different levels of financial tightness.

BOX 6: METHODOLOGY FOR DETERMINING CORPORATE AND HOUSEHOLD VULNERABILITY

The vulnerability classification of the subsectors and occupations and through that the corporate and household debtors has been updated based on the available relevant actual data. In order to identify the companies most

affected by the adverse economic effects of the pandemic, setting out from the main activity according to the Hungarian NACE Rev. 2 (TEÁOR'08), the scope of vulnerable subsectors was defined in the May 2020 Financial Stability Report. In 2021, the real economy data that quantify the economic impacts of the pandemic are already available, and based on such we revised the previous classification. The basis for identifying vulnerable activities was provided by the moratorium participation rate of the corporate loans of the given subsector, the Q2 and Q3 annual change in value added (according to two-digit NACE) and the average subsector-level change in the headcount of NTCA VAT payer corporations with more than 5 employees between February 2020 and December 2020.



As a result of the classification, 203 subsectors were classified into the vulnerable category and 412 subsectors into the non-vulnerable category. In our methodology, in the case of all the three types of data used, taking into account the distributions, we defined vulnerable and non-vulnerable cut-off points, and setting up a hierarchy, put the given variables in order according to their relevance as shown in the flow chart. In the final vulnerability categorisation, progressing in the order according to the variable hierarchy, we classified the subsectors falling outside the cut-off points of the given data set into the appropriate vulnerability categories, and we did the same with the unclassified subsectors at the next variable. In the case of participation in the moratorium, an at least 50-per cent participation rate was the limit that indicated vulnerability, and a maximum 20-per cent participation rate was the non-vulnerable limit. In the case of the annual change in value added we set the vulnerable and non-vulnerable limits at a decline of at least 20 per cent and not more than 0 per cent, respectively. Regarding the change in headcount, we considered the given subsector vulnerable if the headcount decreased at least in the case of half of the relevant firms. Subsectors that were not classified according any of the variables were assigned to the non-vulnerable category. In the case of corporate



loans, on the basis of loan purpose we further segmented the subsectors (NACE 6810, 6820) within the real estate activities sector, which has a significant loan portfolio: the loans extended to finance hotels, offices and shopping centres were classified into the vulnerable category, while the other subsector loans (e.g. warehousing and logistics) into the non-vulnerable category. Following that, we complemented the vulnerable category with 5 subsectors, which had not been assigned to there, but were indicated as beneficiaries in the Interest-free Overnight Restarting Loan. At the end of the classification process, 203 subsectors were identified as vulnerable and 412 subsectors as non-vulnerable. Nearly one quarter of GDP is estimated to belong to the vulnerable activities.

Household customers were classified into 211 vulnerable and 274 non-vulnerable occupations. The above segmentation of the corporate sector was taken as a basis for the vulnerability classification of the retail debtors. We could anonymously assign to the individual debtors the four-digit FEOR (Hungarian Standard Classification of Occupations) codes of their (2019) occupation, and to these codes the two-digit NACE code, in which the given occupation is the most frequent. Vulnerability in the corporate sector was defined at a lower level of aggregation (four-digit NACE code), and thus in the household analysis those sectors with a two-digit NACE code were considered vulnerable in which at least one fifth of the subsectors are vulnerable. Accordingly, all of the contracts of a debtor are considered vulnerable if, based on the occupation, the debtor was employed in a vulnerable sector, and the contract is considered highly risky if it is in moratorium as well.

According to the new vulnerability classification, 22 per cent of the corporate loans outstanding and 20 per cent of the household loans outstanding are related to vulnerable sectors. Corporate loans belonging to vulnerable sectors are estimated to amount to HUF 2,048 billion, corresponding to 22 per cent of the total corporate loan portfolio at end-2020. Within that, loans in moratorium amount to HUF 1,017 billion, which is 11 per cent of all loans outstanding. 100 per cent of the loans outstanding in the tourism sector and 48 per cent of the transport and storage as well as real estate sectors were classified as vulnerable. Exposure is lower, but vulnerability is higher in the corporate sector as well as the mining (90%), social care (91%) and the art, entertainment, leisure (99%) sectors. Although 54 per cent of household loans belonging to those with vulnerable occupations is 20 per cent, half of which is still in moratorium, and thus the ratio of highly risky loans is 10 per cent, with 12 per cent of the debtors connected to it. Most of these loans are among the debts of people employed in the art and entertainment (38%), tourism and catering (37%), mining (32%), manufacturing (31%) as well as the transport and storage (30%) sectors. At the same time, taking into account the shares of the individual sectors in all loans outstanding, the greatest risks are posed by the loans of those working in manufacturing as well as transport and storage.



Chart 52: The role of vulnerable sectors in the household loan portfolio

Source: Central Administration of National Pension Insurance, MNB

The ratio of highly risky household loans is 10 per cent. One fifth of household loans outstanding belong to those employed in occupations which are especially sensitive to the economic effects of the pandemic (Box 6). Half of this exposure is in payment moratorium at present as well, and thus 10 per cent of the total portfolio is considered highly risky (this ratio is 9 per cent within mortgage loans). This stock amounts to 12 per cent of the number of contracts. The art, entertainment, leisure time, the tourism and catering, the mining, manufacturing as well as transport and storage sectors proved to be the most vulnerable sectors, and due to their weight in the total loan portfolio, especially the loans of those employed in the latter two sectors pose risks (Chart 52).

After the expiration of the moratorium, some retail customers may face repayment problems. The income of 23 per cent of those in the moratorium and of 19 per cent of those not in the moratorium declined considerably, by more than 30 per cent in 2020 (Chart 53). This decline can be considered significant enough to substantially influence future repayment capacity. According to the MNB's March 2021 survey, on the basis of self-declaration, 30 per cent of

Chart 53: Change in monthly salary of bank customers



Note: Estimate based on income data of bank customers with wage crediting. Source: MNB





Note: Values weighted by exposures. The sample sizes can vary significantly by country. Data for the EU represent a simple average of all procedures involved in the research, not the average of national averages. Source: EBA

the debtors in moratorium would have been unable to meet their repayment obligations last year.¹⁸ Some 60 per cent of those in moratorium indicated that they would use the moratorium as long as it is available, i.e. they would use an extension if there was one. According to the MNB's Market Intelligence Survey, banks have already begun preparations to serve the expected increase in customer inquiries after the expiration of the moratorium and are available to customers facing payment difficulties with loan facilities to help them restructure.

The institutional system must prepare for the phasing-out of the moratorium. The payment moratorium was extended until end-August 2021. After the phasing out of the programme, however, the ratio of non-performing loans and the number of bankruptcies are expected to increase. Therefore, it is important to have a suitable institutional system that is available to manage the problem. According to the 2020 comparative analysis of the European Banking Authority (EBA), in terms of rates of return, Hungary's in-court insolvency framework in the case of mortgages and corporate loans as well as of SME loans is classified among the weakest performing countries, while the costs related to court proceedings are typically higher and the length of the proceedings is longer than the EU average (Chart 54). In December 2020, the European Commission adopted a new NPL strategy, including proposals to set up state asset management companies, in addition to reforming the insolvency proceedings and supporting the secondary market of nonperforming loans. In relation to these measures, the evaluation of previous crisis management experiences, such as the role of the Hungarian National Asset Management Agency in the preserving of housing is becoming relevant (Box 7).

¹⁸ Part of the negative picture painted by the questionnaire is that in the domestic surveys, the population also indicates a high proportion of difficulties in terms of solvency even during the economic boom. For example, according to the Hungarian data of the Intrum <u>European Consumer</u> <u>Survey</u>, in 2019 the proportion of those in the population who did not pay their bills at least once in the previous year due to financial problems was 20 per cent.

BOX 7: EVALUATION OF THE NATIONAL ASSET MANAGEMENT PROGRAMME

As one of the main elements of the management of the foreign currency loan crisis in Hungary that unfolded in view of the 2008 economic crisis, the programme of the National Asset Management Agency (NAMA) was launched in 2012. Its aim was to improve the situation of the most deprived non-performing mortgage loan debtors and help preserve their housing. With entering the programme, the property serving as collateral for the delinquent mortgage loan became owned by the state, from which the debtor could lease it back paying a preferential rent. According to the data of NAMA, 38,000 customers in total participated in the programme, of which 33,500 were tenants in 2019 as well, when it became possible for all the participants to buy the properties. At that time, 14 per cent of the customers declared that they would remain tenants, while 17 per cent and 69 per cent of them decided to buy their respective properties back in one sum and by instalments, respectively.

The debtors that participated in the programme of the National Asset Management Agency represent a segment of the population who would not have been able to solve their housing problems mostly resulting from the FX loan crisis on their own, without the intervention of the state. Based on our survey conducted by phone by asking 1,068 people in November 2020 it can be concluded that the educational level of NAMA tenants can be considered low overall. A mere 8 per cent of them have higher education degree, and 30 per cent of them only finished the eight years of elementary school. Through the labour market opportunities, the educational level has an impact on the income position as well, and thus in the case of NAMA customers with a lower level of education the income of the household is also typically lower. 30 per cent of the households that participated in the programme do not have more than HUF 150,000 to spend a month, 45 per cent live from a higher budget, but not exceeding HUF 300,000, and the monthly total income of the household exceeds HUF 300,000 only in the case of 25 per cent of them.

Compared to the findings of our previous research, the NAMA tenants have much lower savings than the average. 65 per cent of the respondents would be able to sustain their earlier living standard from their savings for not more

than 1 month, while the same is true for half of the total population and the debtors in moratorium. A mere 12 per cent of the participants in the programme of the Asset Management Agency have reserves for more than three months, which is much less favourable than the 23 per cent and the 20 per cent ratios measured for the total population and among the debtors in moratorium. It can be concluded that the participants of the Asset Management Agency lag behind the overall population in terms of subjective well-being as well. 81 per cent of them are able to cover the usual monthly expenditures only with difficulties, while it is true for 71 per cent of the population as a whole.



Note: If all earners in the household lost their jobs, how long would they be able to maintain their current standard of living? Source: EU SILC, MNB National Asset Management Agency Survey 2020 November, MNB Moratorium Survey 2021 March

The position of NAMA tenants was significantly supported by the low rent. The monthly rent to be paid by the customers was one twelfth of 1.5 per cent of the market value determined upon concluding the mortgage loan contract; the rent was increased by the rate of inflation every year. According to the data provided by the NAMA, the majority of the customers paid monthly average rents of HUF 5,000–15,000. These rents were far below the market average: while for example in 2015 the median of the rents paid by NAMA customers was below HUF 10,000, the median of market rents amounted to nearly ten times more, i.e. some HUF 97,000. This difference in rent increased further in the next years: in 2019, the median of NAMA rents was HUF 15,000, while the market median amounted to HUF 115,000. Although the rent for customers was much lower than the market rent, still only 31 per cent of them

were able to save some money at least occasionally. At the same time, this ratio among those who repurchased their respective properties in one sum was much higher, and thus 70 per cent of them bought it back partly from their own resources.

As a result of the low rents, the ratios of rent delinquencies and evictions also remained moderate. Based on selfdeclaration, four fifths of the NAMA customers were never late with the payment of rent. The NAMA concluded fixed-



term tenancy contracts with 23 per cent of those who were late with paying their rent at least once. The fixed-term tenancy contract was a debt settlement arrangement in which the tenant undertook to pay the due debt until the expiration of the fixed-term tenancy contract and to cooperate with a support organisation (with the mentor of the Hungarian Charity Service of the Order of Malta or the Hungarian Reformed Church Aid). Most of the customers that concluded a fixed-term tenancy contract met the conditions of the debt settlement arrangement and remained in the programme. The NAMA conducted only slightly more than one thousand eviction procedures.

Note: 36,154 person in total, incorporating also those, who have left the programme. Average of the first and last month's rental fee. Source: NAMA Inc.

According to our multinomial logistic regression estimate, the customers that repurchased in one sum, repurchased by instalments, or maintained the rental contract upon making the statement in 2019 are different in terms of several sociodemographic and income characteristics of the households and heads of the household:

- both those who repurchase in one sum and the ones who repurchase by instalments have higher income on average, live in multi-earner and multi-child families, and entered the NAMA programme later than the tenants (ceteris paribus);
- those who repurchase in one sum have higher level of education on average, and have fewer types of
 outstanding debt than the tenants and the ones who buy by instalments (ceteris paribus);
- the three groups are not different in terms of settlement type, and neither the type of the original mortgage loan (housing loan or home equity loan) nor its currency (forint or foreign currency) proved to be significant.

The programme of the National Asset Management Agency that operated between 2012 and 2020 offered a predictable solution to escape from the debt spiral and save the homes for those non-performing mortgage loan debtors who were in a really difficult situation. With the preferential repurchase programme, 86 per cent of the customers may become the owners of their respective properties again, and thus the NAMA achieved its target, ¹⁹ providing good practice for elaborating a similar debtor relief solution in the future.

¹⁹ Due to the research design, the box evaluates the programme in respect of social objectives and does not deal with the cost efficiency with which the institution achieved these objectives. The NAMA Inc was reorganised in November 2020 and merged in TLA Asset Management and Utilisation LLC., a subsidiary of the Hungarian National Asset Management Inc.

5 Profitability and capital position: strengthened capital position amid a significant increase in risks

The net after-tax profit of the credit institution sector amounted to HUF 206 billion on a non-consolidated basis and HUF 378 billion on a consolidated basis in 2020. Credit institutions' annual profits fell by nearly 60 and 45 per cent, respectively, last year. The 12-month return on equity fell to 4.4 per cent and the return on assets to 0.4 per cent, representing a five-year low. Nevertheless, based on total assets, institutions that ended the year with a positive profit account for more than 78 per cent of the sector. Compared to the previous year, profitability was mainly affected by impairment charges of HUF 260 billion, which increased to their long-term average as a ratio of total assets, but remained significantly below the worst levels of the past decade. In 2021, the deterioration in the impairment stage of loans participating in the moratorium for more than 9 months and the end of the moratorium might further reduce the sector's profitability in the short term. On the positive side, however, cost-efficiency continued to improve.

The consolidated capital adequacy ratio of the banking sector increased to 18.3 per cent in 2020, or 19.3 per cent if one takes into account all year-end profits realised in 2020. The half-year improvement was mainly driven by the audit of the interim profit of some institutions and the introduction of the prudential treatment of software assets, while the increase in the risk exposure amount was also restrained by international regulatory easing. Considering the lifting of buffer requirements in April 2020, the sector's free capital is estimated at HUF 2,110 billion, and the free capital of all groups and individual institutions, calculated with full-year profits, exceeds 4 per cent as a ratio of the exposure amount.



Chart 55: After-tax profit and loss of the credit institution sector

Note: At the end of 2020, the ratio of loss-making institutions in terms of total assets was 11 per cent based on consolidated data. Source: MNB

5.1 Risk costs may rise significantly after a profitable 2020

Credit institutions' profits, which were high in previous years, have been sharply reduced by the pandemic. Based on non-consolidated data, the sector's after-tax profit amounted to HUF 206 billion in 2020, representing a nearly 60-per cent year-on-year decline of HUF 291 billion (Chart 55). Although the HUF 138 billion in income attributable to the second half of the year exceeds the profit of 2020 H1, both H2 and 2020 as a full year are among the weakest periods in the last five years. The share of loss-making individual institutions on the basis of their balance sheet total rose to 22 per cent. Of this share, 5 percentage points can be attributed to branches, 8 percentage points to institutions belonging to groups that realised a positive profit on a consolidated basis, and 6 percentage points to specialised public credit institutions playing an active role in the crisis management. Therefore, the vast majority of the sector remained profitable and the moderate negative results of loss-making institutions do not have a significant impact on the capital position. Consolidated profits, which include the income of foreign subsidiaries and financial institutions belonging to the banking groups, fell by 45 per cent to HUF 378 billion, representing a more modest relative decline than seen in the non-consolidated data. The profit of non-monetary financial institutions showed Chart 56: Distribution of 12-month rolling after-tax return on equity of credit institutions weighted by the balance sheet total



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





shown on the right-hand side. Source: MNB

Table 5: Development of 12-month rolling income as a ratio of total assets and some of its components

| | Yearly | | Creek | As a ratio of total assets | | | | |
|------------|--------|-------------------------------|--------------------|----------------------------|--------------------|----------------|--------------------|--|
| | RoA | expanse in total assets | interest margin | Risk costs | Dividend income | Trading income | Operating costs | |
| 2007 | 1.4 | 13.9 | 3.5 | -0.5 | 0.2 | 0.7 | -2.7 | |
| 2008 | 0.9 | 21.6 | 3.0 | -0.6 | 0.5 | 0.5 | -2.4 | |
| 2009 | 0.8 | 2.3 | 3.0 | -1.2 | 0.2 | 0.8 | -2.1 | |
| 2010 | 0.0 | -1.3 | 3.2 | -1.1 | 0.2 | 0.5 | -2.1 | |
| 2011 | -0.8 | 3.1 | 3.2 | -2.1 | 0.3 | 0.6 | -2.1 | |
| 2012 | -0.5 | -9.4 | 3.1 | -0.5 | 0.2 | 0.1 | -2.2 | |
| 2013 | 0.1 | -0.9 | 3.1 | -0.7 | 0.2 | 0.3 | -2.2 | |
| 2014 | -1.7 | 5.0 | 3.1 | -2.4 | 0.2 | 0.0 | -2.2 | |
| 2015 | -0.1 | 0.4 | 2.5 | 1.7 | 0.2 | -0.1 | -2.2 | |
| 2016 | 1.3 | 3.7 | 2.7 | 0.5 | 0.3 | 0.1 | -2.1 | |
| 2017 | 1.8 | 6.4 | 2.3 | 0.5 | 0.3 | 0.4 | -2.0 | |
| 2018 | 1.4 | 8.4 | 2.2 | 0.2 | 0.2 | 0.4 | -2.1 | |
| 2019 | 1.2 | 9.4 | 2.1 | 0.1 | 0.2 | 0.4 | -2.0 | |
| 2020 | 0.4 | 23.0 | 2.0 | -0.6 | 0.2 | 0.3 | -1.8 | |
| Historical | 0.7 | 9.3 | 3.2 | -0.5 | 0.2 | 0.4 | -2.9 | |
| | | 5.5 | 0.2 | 0.0 | 0.2 | | | |

Note: Risk costs represent net loan loss and other provisioning. Indicated values refer to end of the year. Historical average of income components was calculated from June 2002, but the colour scale includes only data from 2007 onwards. Source: MNB only a slight annual decline, falling by HUF 10 billion to HUF 117 billion.

The share of highly profitable credit institutions fell sharply during 2020. As a result of a gradual decline over the year, the 12-month rolling profitability ratios also reached their lowest levels in the last five years at the end of 2020. The sector's return on equity (RoE) declined by 7.2 percentage points to 4.4 per cent, and its return on assets (RoA) fell by 77 basis points to 0.4 per cent (Chart 56). While the vast majority of the sector had RoE ratios above 10 per cent based on total assets in previous years, it was mainly a few smaller institutions and branches that were in this range by the end of 2020. However, 72 per cent of the sector still fell within the 0-10 per cent range, with the share of institutions with a RoE below -10 per cent remaining low throughout the year.

Of the nominal income components, only interest income showed a substantial increase. The bulk of the year-onyear decline in 2020 income was due to a HUF -296 billion change in net loan loss provisioning, which still had a positive net impact in the previous year (Chart 57). The second item with a negative, although much smaller effect was the increase in operating expenses, despite a reduction of personnel expenses. The drop in dividend income, which improved the capital position of subsidiaries, and the relative deterioration of net trading income were also notable. The rise in commission and fee income observed in previous years halted due to the slowdown in economic and financial activity. Credit institutions managed to record a substantial improvement only in interest income, partly thanks to public programmes that also supported lending dynamics and to the central bank's liquidity expansion.

The sector's profitability deteriorated to a greater extent in the first year of the pandemic than during the first year of the 2008 financial crisis. In addition to the unfavourable development of profits, the return on assets was also affected by a large, 23-per cent annual increase in total assets. The major part of the irregular increase in assets was due to the public liquidity expansion measures and the payment moratorium. Despite the faster growth in the balance sheet total, risk costs as a ratio of total assets increased at a similar rate in the last year hit by the pandemic as in the year starting in September 2008, which was mainly due to a forward-looking approach in line with IFRS 9 rules (Table 5). Although risk costs have reached their long-term average calculated from 2002, they are still at a much lower level compared to the worst years

following the financial crisis. Compared to the 2008–2009 period, net trading income and dividend income as a ratio of total assets developed less favourably last year, while operating expenses as a ratio of total assets decreased at a slower rate. The accelerated increase in interest-bearing assets due to the liquidity support measures in response to the pandemic was not matched by a similar increase in interest income, resulting in a narrowing of the interest rate margin from 2.1 per cent to almost 2 per cent over 2020. Looking ahead, interest income is expected to decline due to the end of the moratorium and the deterioration of the portfolio quality. Consolidation of the banking sector may also have a significant impact on the medium-term development of profit items through changes in efficiency and the competitive situation (Box 8).

BOX 8: THE IMPACT OF THE ESTABLISHMENT OF MAGYAR BANKHOLDING ON THE CONCENTRATION OF INDIVIDUAL SUB-MARKETS

The establishment of Magyar Bankholding Zrt. creates the second largest bank in Hungary in terms of total assets. With the participation of Budapest Bank, MKB Bank and Takarékbank, Magyar Bankholding was officially established in December 2020, bringing the three institutions together under common control, making it the second largest banking group in Hungary in terms of total assets and loans. The separate operations of the holding company's member banks are expected to be replaced by a large bank functioning as a single organisation from 2023.

While the establishment of a jointly controlled banking group will increase the market concentration of the banking system, the new player may also increase competition in certain sub-markets through its economies of scale and

relative market power. The most commonly used indicators to measure concentration – the concentration ratios (CRn) indicating the combined shares of the largest banks, and the Herfindahl-Hirschman Index (HHI)²⁰ – do not yet allow direct conclusions to be drawn on the development of competition in the banking system, as there is no consensus in the literature on the impact of concentration on competition. An increase in concentration might increase the market power of dominant players, which might then translate into higher profit margins on products. However, a merger could also translate into lower prices through, among other things, the improvement of



²⁰ The Herfindahl-Hirschman index is the square sum of the percentage share of all companies in the market, with a value between 0 and 10,000. According to the practice of competition supervision in the European Union, the concentration of a market can be considered low if the HHI is below 1,000, moderate if it is between 1,000 and 2,000 and high if it is above 2,000. Source: European Commission (2004): Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03).

efficiency.²¹ The indicators applied do not fully capture all aspects of a market's structure. A merger of medium-sized players might also generate competition, despite an increase in concentration, if it reduces the relative unevenness in the distribution of former market shares of individual players.²² The weight of the countervailing effects may vary in the short and long run.

Following the establishment of the Bankholding, the largest increase can be observed in the previously least concentrated segments, corporate loans and deposits. The Hungarian banking market was moderately concentrated in terms of total assets and also the main retail loan and deposit portfolios before the establishment of the holding, while the corporate segment was close to low concentration. As a result of the establishment of the holding, for balance sheet totals, the CR3 ratio indicating the sum of the shares of the three largest banks rises by 10 percentage points and the HHI by 227 points. The latter does not exceed the threshold of 250 for a rise considered significant in European practice in the case of moderate concentration. For housing loans and personal loans, the CR3 ratio increases by less than 5 percentage points and the increase in the HHI is not considered significant. However, the household deposit market will reach a highly concentrated level as a result of the merger, with three banking groups holding almost two thirds of the portfolio. For corporate loans and deposits, the increase in the HHI is above the 250 level, which is considered significant, but the concentration of these segments is still below the level of that of household portfolios. In both cases, the significant increase is driven by volumes denominated in forints, while the CR3 ratio for corporate foreign currency loans and deposits are not affected by the merger. Looking at client-level figures, the rate of increase in concentration ratios is similar to that of loan volumes, but their level is higher, so that in addition to deposits, they also indicate a high concentration of household clients with loans as a result of the merger.

The institution with the second largest market share in the household segment is established, not only nationally,



but also in all counties and in the capital. The HHI level increases mostly in Bács-Kiskun, Békés and Heves counties, but the concentration in these counties and their districts is still considered rather medium or is only slightly above the 2,000 level. Although the overall proportion of districts with a high concentration is now close to 50 per cent, in about 90 per cent of them the HHI does not exceed 2,500, so exceptionally high concentration is not prevalent. At the same time, the relative advantage of the largest institution in some counties is substantially reduced by the merger compared to the previous situation. The relative equalisation of market power may improve the bargaining power of clients. The merging institutions have slightly different national coverage, so they complement each other to some extent, while leaving room for synergies and efficiency gains.

The increase in the concentration of corporate lending affects banking market power differently across sectors. In two of the sectors with a loan portfolio of over HUF 100 billion, the relative market power of the leading bank measured in market share in this sector is increasing significantly compared to that ranked second: from 0.4 to 17.7 percentage points in the information and communication sector and from 2.5 to 15.7 percentage points in the professional, scientific and technical activities sector. In three other sectors, however, this advantage is significantly reduced: the

²¹ Berger, A.N., Demirgüç-Kunt, A., Levine, R. & Haubrich, J.G. (2004): Bank concentration and competition: An evolution in the making. *Journal of Money, Credit and Banking*, Vol. 36, No 6433-451.

²² Cetorelli, N. (1999): Competitive analysis in banking: appraisal of the methodologies. *Economic perspectives-federal reserve bank of Chicago*, Vol. 23, No. 1, 2-15.; Rhoades, S. A. (1995): Market share inequality, the HHI, and other measures of the firm-composition of a market. *Review of Industrial Organization*, Vol. 10, No. 6, 657-674.

difference between the shares of the two largest creditors narrows from 18.1 to 8.5 percentage points in trade and repair of motor vehicles, from 18.7 to 1.7 percentage points in construction, and from 33.2 to 24 percentage points in administrative and support service activities. The CR3 values of the credit market in these sectors rising to a range of 60–70 per cent, and the different changes in the disparity of shares suggest that increasing concentration still does not pose a stability risk in terms of diversification and the reliance of sectors on a single institution. In addition, the establishment of the new institution might help to ensure that several banks have the experience and knowledge to serve the sectors adequately, thus increasing the choice for corporates.

Overall, the establishment of the Bankholding does not significantly increase concentration in the aggregate household segment, but the level of concentration is already high in terms of the number of clients and deposits in the segment. The concentration of the household credit market is expected to increase significantly in some counties and districts, and the potential negative effects on competition, in addition to exploiting the synergies from the merger, may be offset by a more balanced relative market power of the largest players. The concentration of the corporate loan portfolio will increase to a greater extent, but this segment will remain the least concentrated, and the increase in concentration will not materially increase stability risks when looking at credit markets across economic sectors.

Chart 58: Balance sheet total weighted distribution of credit institutions' 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 With the second wave of the pandemic, risk costs increased as well. Of the HUF 260 billion of impairment recognised in 2020, HUF 126 billion can be attributed to the second half of the year. Although with the end of the first wave of the pandemic, loan loss provisioning also slowed down in the third quarter, credit institutions recognised impairments of HUF 90 billion in the fourth quarter affected by the second wave. At the same time, the share of reversals with a positive net impact – which could still be observed in the case of some institutions in the first half of the year – declined, and a high amount of impairment as a ratio of total assets has become prevalent (Chart 58). This level of loan loss provisioning represents a sharp deterioration compared to the reversals observed in previous years.

Despite the extension of the moratorium, risk costs may rise significantly as early as the first half of 2021. The negative impact of the moratorium on the present value recognised in 2020 slightly exceeds HUF 50 billion for the sector as a whole. However, due to the forward-looking nature of accounting principles, this loss impact already includes the impact of the extension of the moratorium to June 2021 on the profit for several large banks. The expected reclassification of a proportion of loans that participate in the moratorium for more than 9 months to Stage 2 as well as the lifting of the moratorium in 2021 might incur additional risk costs and reduce profitability to an even greater degree. Based on our preliminary, conservative estimates, it would lead to loan loss provisions of around HUF 300 billion in Q1 if all loans that had spent at least 9 months in moratorium were reclassified to Stage 2. This potential loss would not

significantly compromise banks' capital adequacy. However, the actual impact is expected to be smaller (Box 9). For loans with proper performance in the 6-month observation period following the moratorium, it will be possible to subsequently reverse this impairment. In 2021, despite rising risk costs, all banks surveyed in the MNB's Market Intelligence survey expect profitable operations and the vast majority expect their profitability to improve.

BOX 9: IMPACT OF THE PANDEMIC AND THE PAYMENT MORATORIUM ON IMPAIRMENT

The economic crisis caused by the pandemic and the impact of the payment moratorium have led to an increased attention to monitoring the risks and probability of default for loan portfolios that are currently still performing and those protected by the moratorium. In its circular of 18 April 2020, the MNB specifically drew the attention of the credit institution sector to this and recommended the application of stricter monitoring conditions for institutions in order to effectively identify risks.

Based on institutional practices, with respect to performing portfolios (Stage 1, Stage 2), the growth in impairment in 2020 mainly occurred due to the following reasons:

- a **significant deterioration in the macroeconomic forecasts** used in the forward-looking estimation of the probability of default (PD) of clients (in line with IFRS 9) in response to the economic crisis caused by the pandemic,
- due to the increased credit risk identified during the monitoring process, **many loans have been reclassified to Stage 2**, which implies the recognition of losses expected during the entire life cycle,
- several institutions have recognised excess impairment (as overlay) to adjust their models on an expert basis, by making adjustments for portfolio or sub-portfolio parameters (PD value, moratorium participation, sector classification of clients, indications from early warning systems (EWS) with regards to account turnover, changes in income data).

All of these reduce the risk that risky exposures concealed by the moratorium will cause institutions to suffer a sudden increase in impairment losses after the moratorium expires.

The fact that on 2 December 2020 the European Banking Authority (EBA) extended the period of application of its guidelines on payment moratoria in the light of the COVID-19 crisis until 31 March 2021 and introduced an applicability time limit are of particular relevance for loan loss provisioning. Concurrently with the extension, an applicability time limit was set, according to which, for payment rescheduling implemented after 30 September 2020,

the benefits set out in the guidelines may only be applied if the period spent in a moratorium does not exceed nine months. The reason for introducing an applicability time limit is that the longer a client is in moratorium, the more likely it is experiencing structural financial difficulties.

The time limit set by the EBA implies that the easing conditions of the EBA Guidelines cannot be applied to exposures in moratorium for more than nine months, i.e. the institution must decide on an individual basis whether to record an exposure as a restructured exposure and reclassify it from Stage 1 to Stage 2 as a



Stage category based on the participation in the payment moratorium

result of contractual amendments made in the context of the moratorium.

In line with the time limit introduced by the EBA, in its revised IFRS 9 Executive Circular issued on 21 January 2021 the MNB formulated as a default rule that exposures which have been in the moratorium for more than 9 months must be classified as restructured and consequently as Stage 2, as it is reasonable to assume that the obligor is experiencing or is likely to experience financial difficulties in meeting its financial obligations. However, this presumption and the recognition of the exposure as a restructured exposure may be waived on an individual basis on the condition that the institution can demonstrate with sufficient evidence that there has been no deterioration in the financial position of the client.

The MNB expects to meet the requirements of the circular from January 2021 and institutions must recognise the necessary reclassifications by the end of the first quarter, which may have a significant impact on impairment levels. The MNB estimates that this would imply additional impairment charges of around HUF 200 billion in the household segment and HUF 100 billion in the corporate segment if all transactions that have been in moratorium for at least 9 months were reclassified to Stage 2. However, the impact is expected to be lower, as on one hand some institutions have already recognised the impact of these regulatory requirements in their 2020 year-end incomes, while on the other hand the loans for which it can be proven that there is no deterioration in the financial position of the debtor are exempted from reclassification. In addition, it is worth noting that the impact as a ratio of exposures is expected to be much higher for institutions – typically with a retail client base – that do not have information to monitor the financial situation of their clients (e.g. account activity). The estimated increase in impairment in the first quarter could be mitigated in the medium term by the possibility to reclassify from Stage 2 to Stage 1 loans that have been in moratorium for more than 9 months and remain performing during the designated six-month observation period after the end of the moratorium.

Overall, in 2021 Q1, credit institutions will have to reclassify to Stage 2 a significant volume of exposures that have been in moratorium for at least 9 months This requirement alone, we estimate, could impose additional impairment of up to HUF 300 billion on the sector as a whole if all loans concerned were reclassified. However, the impact is expected to be lower, since some loans are eligible to remain in Stage 1, also some institutions have already factored some of this impact into their 2020 income. In addition, loans that prove to be performing during the six months following exit from the moratorium may be reclassified, and thus their impairment may be reversed as well.





The level of operating expenses as a ratio of total assets continued to improve. The decline in operating expenses as a ratio of total assets, which started in early 2019, continued in 2020 (Chart 59). Towards the end of the year, it declined for the first time to almost 1.8 per cent, but this was supported by the expansion of low-cost liquid assets, the payment moratorium and, to a lesser extent, the weakening of the forint as well. Disregarding these effects, it would be still below its pre-2020 level of over 2 per cent. The improvement in operating expenses is also shown by the fact that personnel expenses fell in nominal terms for the first time in years. The gradual rationalisation of the branch networks, which has been ongoing for several years (Box 10), the synergies of the integration of the cooperative credit institutions and the increased use of digital banking channels in the context of the pandemic have also contributed to this change.²³

²³ The momentum of the digital transformation of credit institutions may be boosted by the development of complex strategies in the coming years: https://www.mnb.hu/letoltes/4-2021-dig-transzformacio.pdf

BOX 10: BRANCH CLOSURES: HOW TO MAINTAIN THE BALANCE BETWEEN EFFICIENCY AND ACCESS TO FINANCIAL SERVICES?

The trend of bank branch closures across Europe, including Hungary, has brought the issue of access to financial services to the fore. In traditional banking, commercial bank branches played a crucial role in increasing lending and thus market share. One of the most basic methods of market penetration in the strategy of credit institutions was to enter unserved areas through branches. Along these motivations, the number of branches increased until the financial crisis of 2008–2009, both in Hungary and in the European Union. Since the onset of the crisis, however, there has been a trend of branch closures, driven by credit institutions' efforts to operate more efficiently. For the European Union as a whole, the number of bank branches fell by 31 per cent between 2008 and 2019, while in Hungary the number of branches fell by 44 per cent during the same period.²⁴ However, in addition to increasing efficiency, branch closures²⁵ can make it more difficult for clients to access financial services and raise the question of whether digital channels can perfectly replace physical banking infrastructure in regions without branches.

In Hungary, mass branch closures took place in two phases following the 2008–2009 financial crisis. Our analysis is

based on a database of branch openings and closures between September 2008 and December 2020. During this period, 177 new credit institutions branches were opened, 1,807 branches were closed, and in another 66 cases, the relocation of a given credit institution within the municipality was observed. In the period following the onset of the crisis, the number of branch closures and openings was balanced, with mass closures occurring from 2010 onwards. There have been two main waves of branch closures: between 2012 and 2015, mass branch closures of larger commercial banks were typical, while between 2017 and 2019, branch closures were predominantly related to the integration of cooperative credit institutions.



Note: The bank branch stock pertains to September 2008, and for other years, to the respective year-end. Openings and closures in the case of 2008 are reported for the last four months. Source: MNB

The number of settlements without a bank branch and the distance from the nearest bank branch to these settlements have increased significantly due to the branch closures. The closures have not spared smaller settlements with one branch. While the number of settlements without a bank branch in Hungary was 1,729 in 2008, the first wave of closures increased this number to 1,889 by the end of 2015, and by the end of 2020 there were 2,456 settlements without a bank branch in the country. These settlements are quite homogeneous in terms of urbanisation level, with 2,445 municipalities and only 11 towns. The number of inhabitants without a bank branch in their settlement increased from 950,000 in 2008 to 2 million in 2020. For settlements without a bank branch, the distance by road from the nearest branch is an indicator that can provide a good description of the physical dimension of access to financial services. In 2008, 90 per cent of the municipalities without a bank branch had the nearest bank branch within 10 km by road. By 2015, while the number of municipalities increased, the proportion had decreased slightly to 84 per cent. By 2020, however, the distribution between categories had shifted significantly and distances to the nearest bank branches had increased overall (see the next chart). For example, the number of settlements in the category above 15 km increased

Available at: https://sdw.ecb.europa.eu/browse.do?node=9689719

²⁴ ECB (2021): SSI - Banking Structural Financial Indicators, European Central Bank

²⁵ Increasing banking efficiency has been a priority for both the MNB and the ECB in recent years. Efficiency gains are associated with lower costs and ultimately lower lending rates, which also benefit clients.

sharply from 24 to 298 between 2008 and 2020. The distance to the nearest bank branch was thus on average 8.3 km at the end of 2020 for the population of settlements without a bank branch. This shows that the trend of branch closures, and in particular its second phase, has made it more difficult for a significant proportion of municipalities to maintain physical contact with the credit institutions sector, which is likely to affect older people and the financially disadvantaged (unemployed, long-term sick). The problem is less relevant in the case of municipalities where other service infrastructures and a significant portion of available workplaces are located in the settlement with the nearest bank branch, since traveling for other administrative reasons is necessary anyway.



In the absence of a physical infrastructure, digital banking solutions can facilitate access to financial services, but there are currently still limitations. The lack of a physical presence of bank branches can be compensated by an even wider spread of online banking services, by fully enabling and encouraging clients to use online banking. Although we do not have information on the penetration of online banking at the settlement level, the number of internet subscriptions per capita in different settlements may also provide an indication of online banking habits.²⁶ The map showing the number of internet subscriptions per capita in settlements without a bank branch at the end of 2020 shows that there is a significant overlap between poor bank branch availability and lower internet usage, since the number of settlements in the bottom quartile of internet usage is strongly overrepresented. This is mostly concentrated in the border settlements of Northern Hungary and the Northern Great Plain regions and in small settlements in Southern Transdanubia.²⁷ These results underline the need to make the wider availability of online financial services a



priority to counterbalance bank branch closures. The absence of this aim could lead to exclusion from the formal financial system and stronger use of the informal financial system, particularly in these regions.²⁸ At the same time, making bank branches more difficult to access might increase the use of the digital infrastructure already in place, for example, increasing travel time for cash withdrawals could encourage more frequent card use.

²⁷ It is important to underline that, in terms of internet access, the issue is not about supply, as mobile internet is available almost everywhere in the country. The number of internet subscriptions per capita was used to approximate the patterns of internet usage of consumers.

²⁸ El-Meouch et al. (2020): An Estimation of the Magnitude and Spatial Distribution of Usury Lending, *Financial and Economic Review*, Vol. 19 Issue 2, June 2020, pp. 107–132 DOI: <u>http://doi.org/10.25201/HSZ.19.2.107132</u>

²⁶ According to HCSO's 2018 Digital Economy and Society, 76 per cent of the population use the internet frequently, 54 per cent of whom bank online.

Within the framework of its powers, the MNB has already taken a number of steps to support the digitalisation of the Hungarian banking system, but further public involvement is needed to ensure the expansion of digital solutions. The instant payment system has been introduced, the online availability of earnings statements via the National Tax and Customs Administration of Hungary has been launched based on the MNB's proposal,²⁹ Qualified Consumer Friendly Personal Loans certified by the MNB will be introduced in 2021 to support the spread of fully online lending, and the development of a framework for a statistical real estate valuation system based on a central database has also been commenced. However, in many cases, the application and spread of digital solutions would require public involvement through regulatory changes or the introduction of incentives. As regards the remote identification of clients, a central identification platform (e.g. Central Identification Agent) based on a simple and widely available technological solution and the related legal requirements need to be developed. Enabling the interconnection of and third-party access to existing public databases would increase the efficiency of bank lending and risk management processes and reduce the costs borne by debtors. The development of a digital system that would implement notarisation virtually, while retaining its credit risk mitigation and consumer protection benefits, would significantly reduce the direct costs of lending. Moreover, the development of consumers' financial awareness and digital skills could also contribute significantly to the proper use of digital opportunities.

In summary, as a result of the mass branch closures in the 2010s, there were 44 per cent fewer bank branches in Hungary at the end of 2019 than in 2008. In addition, the number of settlements, mostly municipalities, without a bank branch increased significantly, by 42 per cent, during this period, and so 2 million people now live in settlements without a bank branch. In parallel, the distances to the nearest bank branches have also increased. As a result, physical contact with banks has become much more difficult for many clients, which may significantly reduce the availability of financial services in some areas of the country. For this reason, the wider spread and development of digital banking solutions would be particularly important and would require significant public involvement, for example in the areas of remote client identification, interconnection of and third-party access to public databases and the digitalisation of notarisation.



Note: Data prior to 2014 were prepared under different prudential and accounting standards. Data for December 2020 are included without the easings related to capital requirements. Source: MNB

5.2 Capital adequacy improved by annual profits and regulatory easing

The consolidated capital adequacy of the banking sector improved compared to the end of the previous year. The banking sector's consolidated capital adequacy ratio (CAR) increased from 17.6 per cent to 18.3 per cent in the second half of 2020 (Chart 60). Taking into account the restriction on dividend payouts extended by the central bank until 30 September 2021, and the part of year-end profits realised in 2020 not yet eligible (before audit), the same value is 19.3 per cent. This rise results from an annual increase of 6.5 per cent in own funds and 5 per cent in the total risk exposure amount (TREA). Excluding the 2.5 per cent capital conservation buffer requirement (CCoB) included in the December overall capital requirement (OCR), but currently not mandatory under the April easing introduced by the central bank, free capital stands at HUF 2,110 billion. In addition, the central bank has extended the easing of the Pillar 2 Guidance (P2G) until the end of 2021.

²⁹ In order to encourage digitalisation of the domestic financial system and thereby its competitiveness, the MNB has formulated a number of further proposals in its <u>FinTech strategy</u> and in its recommendation on the <u>digital transformation of credit institutions</u>.



Chart 61: Decomposition of changes in the capital adequacy ratio

Note: For the CAR, percentage point changes are shown. For each item in the numerator (denominator), the chart shows how its change would have affected the level of the CAR if the denominator (numerator) had remained unchanged. Consequently, the sum of the changes in each item is not equal to the percentage point change in CAR. CET1 represents core Tier 1 capital, AT1 represents additional Tier 1 capital and T2 represents Tier 2 capital. Source: MNB

Chart 62: Distribution of banks according to the level of own funds over the overall capital requirement weighted



Note: Q4* values taking into account the easing of buffer requirements in place in December 2020. 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

Both the positive profit and the regulatory measures have improved the level of CAR. In the years before the pandemic, characterised by high profitability, portfolio cleaning, but also strong lending dynamics, we could generally observe an increase both in retained earnings included in CET1 and in the risk-weighted exposure amount for credit risk. Although the credit risk exposure amount had been growing in line with the aforementioned trend in 2020 Q1 prior to the first wave, the international easing, mainly regarding exposures to central governments and central banks, and the SME segment,³⁰ reduced the denominator of the CAR and halted its further increase (Chart 61). In Q3 and Q4, the audit of interim results and the new regulation introducing the prudential treatment of software assets³¹ raised the level of own funds. As a result, the CET1 and T1 ratios increased to 15.8 per cent and 16.2 per cent, respectively, by the end of 2020.

Taking into account the easing of the capital conservation buffer requirement and the total annual profit, the free buffer of all institutions is above 4 per cent. Taking into account the total OCR and weighted by the TREA, 95.7 per cent of the sector had a free buffer of at least 2 per cent at the end of 2020 (Chart 62). The minor capital shortage observed in the first three quarters was satisfied by capital increases in the fourth quarter. Although the free capital of around HUF 2,400 billion, calculated taking into account the easing of the 2.5-per cent capital conservation buffer requirement from April 2020 and the total expected annual profit, is concentrated within the sector, all institutions have a free buffer above 4 per cent as a ratio of TREA.

³⁰ The amendment to the CRR is available at: <u>https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R0873</u>

³¹ Under the new rules, the obligation to deduct software assets from the solvency margin will be eased: <u>https://eur-lex.europa.eu/legal-con-tent/EN/TXT/PDF/?uri=CELEX:32020R2176&from=EN</u>

6 Market and bank liquidity: abundant liquidity in the banking system, balanced funding structure

Short yields are at around the unchanged one-week deposit rate of 0.75 per cent, while long yields have risen substantially since the beginning of the year in line with international developments. The MNB's liquidity expansion programmes continued, which – together with government measures – resulted in a further expansion of the banking system's operational liquidity reserves. In parallel with the increase in domestic foreign currency deposits, the foreign currency funding of the banking system declined, resulting in a more balanced foreign exchange structure. The banking system continued to enjoy stable and balanced financing in the protracted epidemic situation, providing an adequate background for lending to support the recovery.



Source: Government Debt Management Agency, MNB





Source: Government Debt Management Agency, FED, MNB

6.1 Short yields are driven unchanged by the one-week deposit rate, while long yields have risen substantially

Short yields are anchored to the one-week deposit rate. The rate on the one-week deposit instrument continues to be set by the central bank in the context of weekly tenders, in response to the rise in risk aversion towards emerging markets. The 3-month BUBOR, which is of key importance in terms of pricing loans, has been 1-4 basis points above the level of the one-week deposit rate in recent months, standing at 0.79 per cent at end-April (Chart 63). O/N market interest rates, which are important in terms of bank funding, remain highly volatile as the virus situation persists, with movements in these rates being substantially influenced by the current utilisation of the one-week deposit instrument.

In the wake of rising reflationary expectations in developed markets, there was a substantial rise in yields on longer maturities. In line with international trends, Hungarian long government and interbank yields have risen substantially since the beginning of the year (Chart 64). Although long yields remain low by historical standards, the ten-year interbank swap yield rose by 98 basis points and the same maturity government bond market yield by 66 basis points up until the end of April compared to the beginning of the year. In order to stabilise long yields and ensure continued liquidity in the government bond market, the Monetary Council increased the weekly purchase limit for the government bond purchase programme to HUF 60 billion based on its decision at the end of January and abolished the 50-per cent purchase limit for each series of government bonds in line with its decision in early March.



Chart 65: Developments of central bank deposits of banks and assets of the central bank providing liquidity

Note: In addition to purchases of government bonds and mortgage bonds, the Bond Funding for Growth Scheme is shown as an asset purchase programme. Source: MNB



Chart 66: 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, derivatives. Classified into the "other" category: ECB eligible collateral, cash flows from own securities, deviation from and changes in reserve requirements. Source: MNB

6.2 As in international developments, abundant liquidity reserves have been built up in the Hungarian banking system

The central bank's liquidity expansion programmes continued, resulting in abundant and growing liquidity in the banking system. As a result of the central bank's liquidity expansion measures, the deposits of the banking system with the central bank increased substantially and averaged HUF 7,100 billion in April (Chart 65). One-week deposits are the primary instrument used to tie-up liquidity in the banking system, with an average stock of HUF 4,520 billion in April. In addition to the central bank's asset purchases, the expansion of liquidity provided by the central bank was supported by an increase in central bank covered lending and an increase in the stock of loans refinanced under FGS programmes. By the end of April 2021, of covered central bank lending announced on a weekly basis, a stock of some HUF 2,500 billion, mostly with a maturity of 5 years, had been built up in the banking system. As the liquidity risks ease and the acute phase of the crisis subsides, the role of the covered lending facility is gradually diminishing, with the amount available in weekly tenders declining to HUF 10 billion.

Credit institutions' operational liquidity reserves have increased more than one and a half times in the past year. The increase in liquidity reserves in 2020 was mainly driven by a rise in the contractual net cash flows of treasury operations (portfolio gap) (Chart 66). This item is almost entirely made up by inflows of deposits placed with the MNB (one-week, preferential and O/N), the increase of which is directly or indirectly due to the MNB's and the government's crisis management measures. In 2020, the total value of the MNB's asset purchases (mortgage bonds, corporate bonds, government securities) reached close to HUF 1,700 billion, which explains more than 40 per cent of the annual increase in the portfolio gap of close to HUF 4,000 billion. The majority of the remaining increase was indirectly driven by a surge in covered central bank lending and an increase in corporate and household deposits. The latter was driven mainly by the credit moratorium³² and the deposit-increasing effect of the FGS Go!, but was also strengthened by deferred household consumption and the income effect of extraordinary government transfers. Between December 2020 and April 2021, with the support of central bank asset purchases, the banking system's

³² According to the MNB's online survey, nearly 20 per cent of corporates participating in the credit moratorium used the liquidity freed up by the moratorium to build up reserves.





Source: MNB





Note: Country data only represents averages of institutions involved in the EBA Risk Dashboard calculations not the whole banking system of countries. Source: EBA Risk Dashboard, MNB

operational liquidity buffer continued to rise, with the average value of HUF 14,200 billion in April 2021 already 54 per cent higher than the average of the year before the pandemic.

Abundant liquidity is evenly distributed across institutions. The continued expansion of liquidity in the banking system was also reflected in the evolution of the LCR ratio, which rose to 206 per cent by the end of 2020 (Chart 67). This means that at that point in time, the stock of high-quality liquid assets in the banking system as a whole is more than double the amount that would be able to cover the likely cash outflows in the event of a liquidity shock. In addition, a positive development is that this abundant liquidity is not concentrated with a few larger players but is evenly distributed across institutions: banks with an LCR ratio between 200 and 300 per cent had a balance sheet total share of 80 per cent, while 99 per cent of the sector had a buffer of 50 per cent above the regulatory limit at the end of 2020.

Banking system liquidity is abundant across Europe and has been increasing since the onset of the crisis. At end of December 2020, the liquidity coverage ratio aggregated at the individual bank level in European countries stood at 173 per cent and increased by 23 percentage points compared to the end of 2019 (Chart 68). Both in terms of annual growth rate and banking system average, the Hungarian banking system is above the European average. Behind the overall international increase in banking system liquidity are central bank and government liquidity expansion measures, which were necessitated by the liquidity risks posed by the epidemic situation and economic restrictions.





Source: MNB

Chart 70: Development of external assets and liabilities as well as corporate and household FX deposits in the banking system



Note: Credit institutions sector, including the data of EXIM, MFB and KELER. Source: MNB



Chart 71: Changes in the banking sector's FX swap position and in other components of the total FX position

Note: Net FX Swap position = (Balance sheet open FX position - Total open FX position) + Net forward FX position + Other off-balance sheet FX position. Source: MNB

6.3 The banking system is characterised by stable funding and a balanced currency structure

As the loan-to-deposit ratio declined, funding risks were further reduced. The outstanding loans of the Hungarian sectors increased by nearly HUF 2,600 billion in 2020, while the deposit stock expanded by about twice as much, resulting in the loan-to-deposit ratio, which captures funding risks, declining by nearly 5 percentage points over the past year to 71.6 per cent at end of 2020 (Chart 69). The decline in the ratio was thus driven by an increase in client deposits exceeding loans, supported by the MNB's corporate bond purchases, rising foreign borrowing by foreign-owned enterprises, and extraordinary government transfers not associated with bank lending.

As domestic foreign currency deposits increased, foreign currency financing decreased. In 2020, the stock of FX deposits of households in euro terms increased by 15%, while that of corporates increased by 24 per cent (Chart 70). While households' FX savings responded to the weakening forint exchange rate, for corporates, cheap FX funding³³ through foreign parent companies could also have significantly increased the amount of FX deposits. As a result, FX deposits in these two sectors increased by more than EUR 2.5 billion over the past year, allowing the banking system's external foreign currency resources to fall by EUR 2.1 billion. At the same time, FX assets also decreased by more than EUR 1 billion, further reducing the need for FX funding. In the first quarter of 2021, in parallel with the decrease of EUR 0.3 billion in corporate foreign currency deposits, EUR 0.4 billion of foreign currency funds flowed back into the banking system, which shows a moderate reorganisation in the foreign currency financing structure.

With a more balanced on-balance sheet FX position, the net FX swap position of credit institutions has declined to close to zero. Credit institutions still had an average net FX swap position of HUF 1,550 billion in the first half of 2020, which by December had turned into an average net FX position of around HUF -55 billion (Chart 71). The development of the near-zero net FX swap position was mainly driven by the change in the on-balance sheet FX position: the average FX asset surplus of HUF 540 billion in the first half of 2020 turned into a FX liability surplus of HUF 370 billion by December, as a result of domestic FX deposit inflows and a decrease in FX assets. The decline in the net FX swap position was also supported by the declining net

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| Ratio | 31 December 2020 | | | | | | | |
|--|------------------|------------|---------------------------|-----|---------|-------------------|-----------------|--|
| | 100 | 120 | 140 | 160 | 180 | 200 | 220 | |
| FFAR | 100 | 120 | 140 | 160 | 180 | 200 | 220 | |
| FECR | -15 | -10 | -5 | 0 | 5 | 10 | 15 % 15 | |
| IFR | | 5 | 10 10 | 15 | 20 | 25 | 30 % 30 | |
| MFAR* | 25 | 27 | 29 | 31 | 33 | 35 | 37 % 37 | |
| LCR ^{**} | 100 | 140 140 | 180 180 | 220 | 260 | 300 300 300 | 340 % 340 | |
| Regulatory limit(s) Actual | | | | | | | | |
| - 3 months earlier - 12 months earlier | | | | | er | | | |

Chart 72: Compliance with the 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. The edges of the blue rectangle denote the lower and upper quartiles of the distribution. * As of 1 October 2019, the regulatory minimum level is 25 per cent, while 20 per cent before 1 October 2019. ** Excluding mortgage banks and home savings funds. For FFAR and FECR, a temporary tightening was in place from 24 March to 18 September 2020. Source: MNB

FX forward demand from the domestic sectors, which shrank from an average HUF 950 billion in the first half of 2020 to HUF 285 billion in December. Thus, by the end of 2020, compared to the previous period a more balanced FX composition and a low net FX swap position had evolved, which did not change significantly in the first four months of 2021.

Even during the protracted epidemic period, banks continued to operate with stable and structurally sound funding, with growing buffers. Following the regulatory changes made by the MNB in 2020³⁴, banks' funding position has continued to strengthen; there are no adverse trends in either the distribution of risk across banks nor in the funding structure (Chart 72). At sector level, the banking system has been operating for almost a year with a virtually closed on-balance sheet foreign exchange position. The surplus of stable foreign currency resources at banks has increased substantially, mainly due to an increase in the stock of foreign currency deposits by households and corporates. The sector-wide reliance on corporate funding continued to decline. The stock of stable mortgage-based funding also increased, supported by the MNB's mortgage bond purchase programme. In addition, the MNB estimates that banks are also prepared to meet the Net Stable Funding Ratio (NSFR) requirement under the EU framework from 28 June 2021, with only a limited need for adjustment expected at the individual level of some institutions within the banking group. The funding position of banks could therefore contribute substantially to lending to support the recovery from the crisis.

³³ Foreign currency financing from abroad increased by around HUF 1,000 billion between December 2019 and December 2020 in the non-financial corporate sector.

³⁴ <u>https://www.mnb.hu/sajtoszoba/sajtokozlemenyek/2020-evi-sajtokozlemenyek/az-mnb-felulvizsgalta-a-devizafinanszirozasi-kockazatokat-celzo-makroprudencialis-szabalyozasait</u>

7 Banking sector stress tests: even a severe stress would not trigger sharp adjustment needs

In the second half of 2020, the liquidity situation of the banking sector based on the LCR substantially improved, and thus even in the event of a severe liquidity shock assumed in our liquidity stress test, almost all institutions would have complied with the regulatory requirement. In line with this, the Liquidity Stress Index have continued to come closer to its theoretical minimum during the half-year.

In our solvency stress test we assumed higher credit risk for those contracts participating in the moratorium for at least nine months, in the case of which solid repayment capacity cannot be rendered probable, and thus, according to our calculations, after the end of the moratorium, a substantial volume of outstanding loans may become non-performing. On the other hand, over a two-year horizon we project higher interest, fee and commission income than before. With this, the banking sector would close the stress scenario with major, i.e. HUF 518 billion after-tax profit cumulated for two years, while weighted by risk-weighted assets, 17.7 per cent of the banks would accumulate a loss. Based on our final result, only a small part of banks would breach the Pillar 1 capital requirement, and even considering the total requirement prevailing at the time of the report, negligible, i.e. HUF 7.8 billion, capital increase would be necessary at systemic level.

In May 2021, the Government announced a further extension of the moratorium by two months and held out the prospect of a subsequent prolongation as well. The possible generally available extension of the programme from September 2021 poses a significant downside risk (see Chapter 8), which could jeopardise the capital position of several banks through an increase in loan loss provisions.

| Assets | | | Liabilities | | |
|--|------------------------|------------------------|--------------------------------------|----------------|------------------------|
| Item | Degree | Currencies affected | ltem | 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 | | | |

Table 6: Main parameters of the liquidity stress test

Source: MNB

7.1 The liquidity situation of the vast majority of banks is adequate even after the stress

The liquidity stress test assumes the simultaneous occurrence of major bank liquidity risks and takes into account short-term adjustment and contagion among banks. The liquidity stress test examines the impact of an assumed low-probability, simultaneous occurrence of financial market turmoil, exchange rate shock, deposit withdrawals, credit line drawdowns and withdrawals of owners' funds on the LCR. 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 (Table 6).35 Of the changes implemented in the set of monetary policy instruments in spring 2020, we consider in this stress test again those measures that are still in force and are broadening banks' LCR adjustment opportunities.³⁶.

³⁵ For a detailed description of the methodology, see Box 9 of the May 2016 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.

³⁶ The central bank's long-term collateralised loan facility and the simultaneous expansion of the scope of collaterals, and the introduction of the oneweek deposit.



Chart 73: Distribution of the LCR before and after stress, based on the number of banks

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



Chart 74: 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 liquidity situation of the banking sector based on the LCR substantially improved in the second half of 2020, due to which almost all institutions would have complied with the regulatory limit even in the event of a severe stress. The distribution of the pre-stress, initial LCRs has become much more favourable in the second half of 2020: by the end of the year the median rose to 230 per cent from 190 per cent registered in June 2020 (Chart 73). The impacts of the shocks increased to a lesser degree during the half-year, as a result of which in the stress scenario even the median of the results disregarding the adjustment opportunities rose substantially, by 35 percentage points, and its value of 140 per cent, registered at the end of 2020, significantly exceeded the regulatory requirement. In parallel with the rise in the median, material growth occurred even in the lower part of the distribution, representing riskier institutions. Due to this, also considering the adjustment opportunities and the liquidity-increasing impact of the set of monetary policy instruments revised in spring 2020, more than 90 per cent of the institutions would comply with the regulatory minimum in both quarters of the half-year, even after a severe liquidity stress. Moreover, other adjustment opportunities of those banks which fall below 100 per cent of the LCR after the shocks are almost always broad enough to avoid resorting to the additional options attributable to the change in the set of instruments.

The impact of deposit withdrawal shocks, which have the largest LCR-deteriorating effect, increased during the halfyear. In line with the fact that on average, roughly 65 per cent of the liabilities side of Hungarian banks is comprised of deposits (of which sight deposits and current accounts account for 78 per cent), from the stress components, the banking sector's liquidity position would be deteriorated the most by a household deposit withdrawal shock, followed by the shock-like withdrawal of corporate deposits. Moreover, during the half-year the impact of a shock-like withdrawal of deposits significantly increased both in the household and corporate segments. The effect of the interest rate shock has also become more significant (Chart 74), which is primarily attributable to the fact that from this round, instead of fully recognising the oppositesigned effects of the shock, we only take into consideration the direct effects on the liquid assets within the LCR.

By the end of 2020, the Liquidity Stress Index has come even closer to its theoretical minimum. The Liquidity Stress Index is designed to capture the heterogeneity across institutions and aggregates the post-stress percentagepoint liquidity shortfalls compared to the regulatory limit calculated at the individual bank level by considering the


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



Note: Year-on-year growth rate of yearly GDP, based on seasonally unadjusted data. Source: MNB

size of the given bank. This also allows us to draw conclusions with regard to the extent of a potential stress situation within the banking sector. From its extremely low value registered in June 2020, during the second half of 2020, the index declined further, thereby coming even closer to its theoretical minimum (Chart 75). At the end of 2020, after a major growth, the post-stress liquidity surplus over the regulatory requirement amounted to HUF 2,109 billion, thereby coming close to its outstanding value registered at the beginning of 2018. Meanwhile, the liquidity need necessary for reaching the regulatory requirement fell to merely HUF 9 billion, even in our calculations ignoring the additional options attributable to the changes in monetary policy instruments.

7.2 The sector's capital need would be minimal even in the event of a severe stress

In the stress scenario, we examine the impact on capital adequacy of economic slowdown, rising interest rate level and weakening exchange rate evolving as a result of the simultaneous occurrence of unfavourable shocks. The forecast in the March Inflation Report was used as the baseline scenario for the stress test. In the stress scenario we analyse the impact of the simultaneous realisation of several external risks surrounding the baseline scenario. One of the key risks is that the coronavirus pandemic entails persistent negative real economic effects, due to, for example, the slower than expected rise in the vaccination rate or the appearance of new mutations and the onset of additional waves in the wake of those. In addition, financial market turbulences stemming from the strengthening of risk aversion to emerging markets also represent a major risk. In the stress scenario, demand for Hungarian export declines, investment activity shrinks due to the private sector's increasing risk aversion, production capacities are impaired, household consumption decreases, which altogether results in a temporary fall in output. In the protracted pandemic situation, the unemployment rate materially rises, while the wage dynamics slow down. In the stress scenario, during those two years in total economic growth falls short of the baseline scenario by 5-6 per cent, accompanied by a weakening exchange rate and a major rise in the level of interest rates (Chart 76).

In our credit risk models we took into consideration the effect of the extended payment moratorium until June-2021. In our impairment calculations, we also took into consideration – in addition to relevant amendments



Chart 77: Cumulated 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 78: Cumulated 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 implemented due to the moratorium in the Financial Stability Reports of May and November 2020 - the prolongation of the moratorium until June 2021 in the case of all debtors involved in the scheme. Due to the deterioration in the macroeconomic environment during the moratorium, credits risk of the participants in the moratorium increases. We considered this impact in the post-moratorium transition probabilities between credit quality categories, in the third quarter of 2021. We also supplemented our models with the higher credit risk of debtors who became more vulnerable due to the pandemic situation. In accordance with the position of EBA and the MNB's executive circular³⁷, we reclassified the exposures to the Stage 2 category, if on 31 December 2020 they participated in the moratorium for at least nine months, and banks were unable to ascertain the customers' solid debt service capability.³⁸ The reclassification is done already at the starting point of the scenario. Thus, the reclassification in our scenarios does not entail an explicit additional impairment recognition, but the presumably higher credit risk of contracts is present in our results.

At the start of the scenario, a material part of the Stage 2 portfolio, having a considerable size resulting from to the reclassification rules, becomes non-performing after the moratorium. Due to the moratorium, at present it is not possible to default on the loan. However, due to the forward-looking logic of IFRS 9, a significant part of the additional loan loss provisioning need appears already at the start of the stress scenario, when the scenario is incorporated into the expectations. Due to the reclassification rules in force from 1 January 2021, the ratio of those in Stage 2 has significantly increased, from which as a result of the deteriorating economic environment after the end of the moratorium, a large-scale transition will take place to the non-performing category. During the two years of our stress scenario, a major additional provisioning need will arise: in the case of the corporate portfolio, 1.9 per cent of the aggregate gross book value (Chart 77), while for the household contracts, 2.8 per cent of it (Chart 78). According to the forecast of our model, in the stress scenario at the end of the second year the ratio of loans past due over 90 days as a percentage of gross outstanding loans would be 4.7 per cent and 14.6 per cent in the case of the

³⁷ Executive Circular on using macroeconomic information and the factors indicating a significant increase in credit risk under the IFRS 9 standard. Available at: <u>https://www.mnb.hu/letoltes/ifrs9-vezetoi-korlevel.pdf</u>

³⁸ In the case of corporate clients, we approximated this by the sectoral categorisation presented in Box 6 of the report, and using the income information derived from a data supply in the case of household clients.



Chart 79: Developments in items of earnings before loan losses

Chart 80: Developments of certain items of the profit and loss statement in the stress scenario, for the



Note: Cumulated values over the 2-year-long scenario. The profit and loss impact of other items consists of the following: NDIF- IPF- and Resolution Fund fee, capital needs of foreign subsidiaries and profit of financial enterprises belonging to bank groups. Source: MNB

Chart 81: 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

corporate and household portfolio, respectively.³⁹ However, in our stress test we ignore that after the moratorium the banking sector will presumably make efforts to restructure a material part of the contracts becoming problematic, which may reduce the NPL rate.

In the stress scenario, profit before loan losses, which is already high in the baseline scenario due to the expected rise in net interest income, will grow by a further HUF 96 billion. The net interest income estimated for the baseline scenario is higher by HUF 198 billion compared to our previous report over the two-year horizon of the scenario. This is partly due to the fact that in line with our new loan forecast we calculated with a larger volume of loan disbursements and also because, in the absence of amortisation, banks recognise higher interest income on the outstanding principal of contracts remaining in the moratorium. In the stress scenario, as a result of the yield curve shock, the net interest income exceeds that in the baseline scenario by HUF 288 billion in two years (Chart 79). Due to the revaluation of items stated at fair value, a major loss occurs upon the realisation of the shock in the net trading income, which, however, declines as over time fair values come closer to their face value. The two-year net fee and commission income in the baseline scenario exceeds that stated in our previous report by roughly HUF 144 billion.⁴⁰ On the whole, the two-year cumulated baseline profit before loan losses amounts to HUF 1,156 billion, while in the stress scenario it exceeds the baseline value by HUF 96 billion.

The banking sector closes the stress scenario with significant, HUF 518 billion, after-tax profit; however, there is major heterogeneity behind this. In the stress scenario, the banking sector's two-year profit of HUF 1,252 billion before loan losses is reduced by the additional loan loss provisioning needs on the household and corporate portfolio, by HUF 646 billion (Chart 80). Nevertheless, the sector still closes the two-year stress scenario with significant, HUF 518 billion, profit after tax. However, there is major heterogeneity behind this: 35 per cent of banks based on the number of banks and 17.7 per cent of them weighted by risk-weighted assets accumulate losses throughout the scenario, while in the quarter when the stress materialises, almost all institutions realise a loss.

Even in the event of a severe stress, a negligible capital need would arise at the sector level. From its pre-scenario value of 19.4 per cent, in the baseline scenario, the capital adequacy ratio of the banking sector rises to 20.6 per cent after a moderate decrease occurring in the first year (Chart

Table 7: Stress test results at various capital requirements

| | 8-per cer | nt capital requ | uirement | All capital requirements* | | |
|---|---------------------|--------------------------------------|--------------------|---------------------------|--------------------------------------|--------------------|
| | Before scenarios | Mid-range of baseline scenario | Stress scenario | Before scenarios | Mid-range of baseline scenario | Stress scenario |
| Capital need of banks (HUF bn) | 0.0 | 1.3 | 3.4 | 0.0 | 5.6 | 7.8 |
| Average capital need of banks** (percentage points) | 0.0 | 1.0 | 2.7 | 0.0 | 4.5 | 6.1 |
| Capital buffer of banks above requirement (HUF bn) | 2 191.2 | 2 778.5 | 2 467.8 | 1 516.4 | 2 019.6 | 1 703.0 |
| Average capital buffer of banks above requirement** (percentage points) | 11.3 | 12.5 | 11.1 | 7.8 | 9.1 | 7.7 |

Note: *Capital requirements effective at the time of the publication. **RWA-weighted averages. Data before the scenarios are 2020 Q4 figures, while data of the respective scenarios pertain to the end of the second year of the scenario. Source: MNB 81). On the other hand, in the stress scenario, by the end of the first year, the initial CAR of the banking sector falls by 2.7 percentage points due to the losses arising from the shock-like change in the yield curve and in the credit risk expectations. By the end of the scenario, it returns to its initial level, which, however, is accompanied by a material growth in the range of distribution. At the end of the stress scenario, the tenth percentile of the distribution – with its value of 12.2 per cent - materially exceeds the Pillar 1 capital requirement, based on which only a small part of the sector would become vulnerable upon the materialisation of our stress scenario. Weighted by risk-weighted assets, by the end of the stress scenario merely 0.6 per cent of the sector would breach the 8-per cent limit and a capital need of HUF 3.4 billion would arise (Table 7). Even when considering all capital requirements in force at the time this report is published, a negligible capital increase of HUF 7.8 billion would be required at the sector level.

³⁹ However, in the baseline scenario, the private-sector NPL rate will be significantly lower, a single-digit figure. Based on the MNB's Market Intelligence survey, according to the expectations of Hungarian banks, by the end of 2021, the non-performing loan ratio may rise to 5 per cent in the private sector.

⁴⁰ According to our calculations, the predicted development of the net fee and commission income and of additional income statement items is connected to the changes in the balance sheet total. However, in 2020 the balance sheet total of the banking sector – as a result of the payment moratorium and the revised set of monetary policy instruments – significantly increased, which was not accompanied by a proportionate rise in these profit and loss items. Accordingly, we approximated the 2020 growth in the balance sheet total, used in our forecast, by its growth registered in 2019.

8 Special topic: aspects to be considered when extending the payment moratorium

Following the outbreak of the coronavirus pandemic in early 2020, numerous governments decided to introduce moratorium on loan repayments. In Hungary, based on the MNB's proposal, the Government introduced the moratorium as of 19 March 2020. In its original form the programme lasted until the end of December 2020, then – considering the developments in the pandemic situation – the Government extended it in an unchanged form until 30 June 2021.

The moratorium has been an effective element of the toolkit addressing the adverse effects of the coronavirus pandemic. This wide-ranging use of the payment moratorium had not been part of the economic policy toolkit before, but with the spreading of the pandemic the predictability of the economic environment declined to such a great degree that it became reasonable to temporarily suspend the repayment of loans. As a result of the programme in Hungary, additional liquidity amounting to some HUF 1700 billion (corresponding to around 3.6 percent of GDP) was made available for actors in the private sector in 2020.

The programme has had clear advantages, but – as time goes by – risks may also arise as a result of its sustenance. The ratio of advantages to risks depends on the time that has elapsed since the introduction of the programme as well as on the changes in the economic environment. The advantage of the payment moratorium is that it has supported the liquidity position of households and companies in an extremely uncertain economic environment, and with the original nine-month duration it also has had a positive impact on these actors' future prospects and expectations. As a result of the programme, the private sector was granted access to additional financing in an economic environment where banks tightened the credit conditions, and thus the moratorium also contributed to the mitigation of the procyclicality of the financial system. This is also reflected in the growth rate of household and corporate loans outstanding, which has remained high even by European standards.

The uncertainty of the economic environment has declined considerably since the announcement of the programme, and in parallel with the increase in the vaccination coverage rate, the economy may expand by 4–6 percent this year. Following the tightening of credit conditions observed in 2020 H1, seeing the gradual restarting of the economy, banks eased their standards to some extent, and they are not planning any further tightening for the next period either. It means that in parallel with the recovery banks are also able to satisfy the funding needs of the economy, which reduces the magnitude of the advantages stemming from the maintaining of the moratorium.

In May 2021, the Government announced a further extension of the programme (by two months for the time being), and also held out the prospect of a subsequent extension as well. The wide-ranging, sustained recourse to the moratorium increases consumer protection risks and the bank credit risk as well. Accordingly, we consider it important that the programme be extended in a form that triggers the return of a wide range of customers to debt servicing, while those whose stretched financial position justifies may continue to use the moratorium. Thus the increase in risks would not impair the advantages stemming from the programme.

8.1 Consumer protection aspects and risks

In line with the MNB's earlier communication, following the expiry of the moratorium, participating debtors will face the fact that the maturity of their loan will be extended by a longer period than the time spent in the programme, and the amount to be paid during the entire term will also rise. This may result in risks especially in the case of households, as they are much less able to foresee the consequences of participating in the moratorium, and their leeway to avert adverse effects (e.g. through amendment of contract) is also more limited. According to our questionnaire survey, **a mere 31 percent of the debtors participating in the moratorium understood the two main consequences of the** **programme for debt servicing**, i.e. the fact that although the amount of the monthly instalment does not change as a result of the programme,⁴¹ the term increases to a greater degree than the number of months spent in the programme.

The repayable amount and the term prolongation depend on the residual maturity calculated at the date of entering the moratorium as well as on the interest rate. Table 8 and Table 9 present the impact of a presumed moratorium lasting until June 2022 in the case of a HUF 15 million mortgage loan and a HUF 1.5 million personal loan, using various interest rates. The impact on customers may pose a risk especially in the case of loans with longer residual maturities and higher interest rates if the debtor is unable to foresee the exact consequences of the programme for debt servicing, and is unable to prepare for the related effects on the family budget.⁴² The MNB considers it particularly important that customers be able to assess the future impacts of the moratorium on debt servicing.

Table 8: Impact of a payment moratorium between March 2020 and June 2022 on the total repayable amount and thematurity of a HUF 15 million mortgage loan

| | | Interest rate | | | |
|--|-----------------------------------|---------------|------------|------------|--|
| | | 3 per cent | 4 per cent | 5 per cent | |
| Increase in the repayable amount (HUF) | | | | | |
| | 5 years | 1 092 466 | 1 495 384 | 1 919 943 | |
| Residual | 10 years | 1 181 326 | 1 663 309 | 2 196 272 | |
| maturity | 20 years | 1 390 615 | 2 079 265 | 2 927 983 | |
| | 30 years | 1 649 024 | 2 641 150 | 4 011 985 | |
| | Increase in the maturity (months) | | | | |
| | 5 years | 31 | 32 | 33 | |
| Residual | 10 years | 35 | 37 | 40 | |
| maturity | 20 years | 43 | 49 | 56 | |
| | 30 years | 53 | 63 | 76 | |

Note: Term prolongation also includes the 27 months period spent in the moratorium. Source: MNB

Table 9: Impact of a payment moratorium between March 2020 and June 2022 on the total repayable amount and thematurity of a HUF 1.5 million personal loan

| | | Interest rate | | | |
|--|----------|---------------|-------------|-------------|--|
| | | 7 per cent | 15 per cent | 25 per cent | |
| Increase in the repayable amount (HUF) | | | | | |
| | 2 years | 253 890 | 591 688 | 1 086 960 | |
| Residual | 5 years | 283 523 | 766 103 | 1 756 596 | |
| maturity | 7 years | 305 969 | 926 902 | 2 629 879 | |
| | 10 years | 344 642 | 1 260 029 | 5 841 665 | |
| Increase in the maturity (months) | | | | | |
| | 2 years | 30 | 35 | 40 | |
| Residual | 5 years | 36 | 48 | 67 | |
| maturity | 7 years | 40 | 58 | 96 | |
| | 10 years | 46 | 79 | 196 | |

Note: Term prolongation also includes the 27 months period spent in the moratorium. Source: MNB

Based on the characteristics of the mortgage loans and personal loans participating in the programme at present, in the case of a moratorium lasting until June 2022, for more than half of these loans the maturity would increase by more than 42 months (three and a half years), 27 months of which would be explained by the time spent in the programme, compared to the original maturity. Differences, however, are significant: the term prolongation would exceed 4 years in the case of 29 percent of mortgage loans in moratorium and 36 percent of the personal loans in the programme

⁴¹ At the same time, in the case of variable-rate loans, as a result of a change in the reference interest rate during the period of the moratorium, the instalment may be amended following the expiration of the programme.

⁴² The adverse effects may partly be mitigated by the statutory possibilities of a free early repayment of the interest debt that accumulated during the moratorium and, at the debtor's discretion, of undertaking to pay higher instalments than the ones set forth in the original contract.

(Chart 82). Meanwhile, the median of the increase in the total repayable amount is between HUF 500–600 thousand. It means that the total repayable amount increases by over 10 percent for more than half of the mortgage loan debtors and by over 40 percent for more than half of the personal loan debtors.





Source: MNB

8.2 Impacts related to changes in payment morale

In March 2021, the MNB conducted an online questionnaire survey with the participation of 19 157 households that in March 2021 participated in the payment moratorium with at least one loan. A significant portion of these households that had recourse to the moratorium could have afforded to continue the repayment.

The questionnaire contained questions that intended to capture households' expectations for their own future financial situation and the planned duration of participating in the moratorium. It allows to assess the ratio of those households participating in the moratorium in March 2021 that have sound repayment capacity but would probably intend to participate in the moratorium later as well if its extension applied to them.

In order to assess the customers concerned, as a first step – on the basis of their responses given in March 2021 – we identified which households would be able to repay their loans with high probability after June 2021. Firstly, we presumed that those have strong repayment capacity who declared that their income position had not worsened since the appearance of the coronavirus pandemic, and at the same time expected an improvement or no change in their households' financial situation in the next one year. Secondly, we took into account those debtors in moratorium who responded that they did not expect any payment difficulties at all following June 2021.

Based on the above, it is presumed that at least 56 percent of the households in moratorium would be able to repay their respective loans if they left the moratorium. In the second step we narrowed the range of selected households to the ones that indicated that they planned to use the moratorium as long as possible. On the whole, according to the findings of the questionnaire, 27 percent of the households participating in the moratorium are presumed to be able to repay their respective loans, but would still apply for continued participation in the moratorium.

If the moratorium would be extended for a long time, the problem of moral hazard may also arise: **customers 'may get used to' their temporarily higher disposable income, and their willingness to pay may decline after the moratorium**.

Moreover, this behaviour may encourage those paying debtors as well who do not participate in the programme to stop repayment. According to our previous research that examined defaulting mortgage loans, the share of debtors with moral hazard may be as high as 10–20 percent within a portfolio.⁴³

PROBLEM-FREE CORPORATIONS IN THE MORATORIUM

In addition to asking household debtors, we also conducted a questionnaire survey of 1233 undertakings that were in moratorium in March 2021. The findings suggest that many undertakings' favourable financial position would have allowed them to pay the instalments, but they still used the moratorium. 23 percent of the undertakings in moratorium declared that they would have been able to completely pay their respective instalments if there had not been a moratorium. A similar percentage (22.5 percent) of the enterprises in moratorium indicated that their annual sales revenues were up in 2020 compared to 2019. In the case of companies, however, the maintenance of bank financing relations may be a stronger motive to leave the programme than in the case of households, which has already been seen in the faster decline in the utilisation of the corporate moratorium.

8.3 The impact on bank risks and lending activity

The extension of the moratorium has an impact on bank credit risks as well as on the classification of assets into credit risk categories. Although in line with the MNB's executive circular issued in relation to this subject (Box 9) the part of the portfolio in moratorium where it was proven that the customer's financial position had not deteriorated could remain in the Stage 1 category, in the case of a significantly extended programme it may become necessary to revise the practice of loan loss provisioning. In particular, the credit risk rating of the portfolio in moratorium may be determined by international regulatory provisions as well as by parent bank's or auditor's requirements, or – in the case of listed banks – by investors' expectations, and significant exposures may become reclassified into the Stage 2 or even Stage 3 categories. In these credit risk rating categories, banks already have to reckon with the losses expected for the entire term of the loan as loan loss provisioning, in a forward-looking manner. The increase in loan losses also significantly impairs the profitability of the banking sector as a whole.

Through the negative impact on the capital position, the rise in losses would narrow the lending capacity of banks as well. At the same time, the uncertainty related to the regulation may also lead to a deterioration in banks' willingness to lend, and – being afraid of a later default – financial institutions may expressly refuse to lend to debtors that remain in the moratorium. As a result of a decline in lending capacity, the pace of recovery from the pandemic may also decelerate, and thus the **incurring costs** of the moratorium **would be spread at whole-economy level**, which would entail unfavourable effects for those households and companies as well that do not participate in the programme.

At the same time, the extension of the programme poses a risk in terms of the international assessment of the Hungarian financial system as well. In addition to the Hungarian one, loan moratoria are in effect only in six countries in the European Union, and typically with the participation of a narrower portfolio than in Hungary. As far as we know at present, moratoria are not expected to be extended in most of the countries following June 2021. As a result of a further, generally available extension, the Hungarian moratorium would be unprecedented in Europe (Chart 83), and it could significantly impair the credit rating and investor assessment of Hungarian banks or even of the state, and spoil the competitiveness of the economy as well.

Accordingly, when extending the payment moratorium, the Magyar Nemzeti Bank considers it extremely important that the majority of the debtors currently participating in the programme restart the repayment of their respective loans, and only those should take the opportunity offered by the extension of the programme who really need the backstop provided by the moratorium.

⁴³ Dancsik B., Fábián G., Fellner Z., Horváth G., Lang P., Nagy G., Oláh Zs., Winkler S. (2015): Comprehensive analysis of the nonperforming household mortgage portfolio using micro-level data, Magyar Nemzeti Bank, MNB Occasional Papers No. Special Issue. Magyar Nemzeti Bank, MNB Occasional Papers No. Special Issue.



Chart 83: Moratoria currently in force in the EU and in the UK and their expected phase out date

Source: ESRB, national central banks' websites

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APPENDIX: MACROPRUDENTIAL INDICATORS

1. Risk appetite



Source: Bloomberg.

Chart 3: Dresdner Kleinwort indicator



Source: DrKW

2. External balance and vulnerability





Source: MNB



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Source: MNB.



Chart 6: Net external debt as a percentage of GDP

3. Macroeconomic performance





Source: HCSO

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Source: HCSO, MNB





Source: MNB

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Source: HCSO

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Source: HCSO, MNB



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Source: Reuters, Bloomberg



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Source: Bloomberg

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5. Asset prices





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

Source: MNB

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Source: BSE, portfolio.hu

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Source: MNB, ECB, Eurostat

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Source: MNB

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Source: MNB

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Source: MNB

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Source: MNB, ECB





Source: MNB

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Source: MNB

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Source: MNB



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Source: MNB





Source: MNB





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





Source: MNB









Source: MNB, KELER, Reuters, DrKW







-Liquidity index (exponentially weighted moving average)

Source: MNB, KELER, Reuters, 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: MNB





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



Source: MNB





Source: MNB









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 7:

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Chart 10:

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Chart 40:

The values for December 2019 and June 2020 have been calculated in the case of the security portfolio, the IRS portfolio, loans and liabilities on a cashflow basis instead of a contract basis. In addition, in the case of loans and liabilities and for the same period, we could only take into account remaining maturities instead of the times left 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 for December 2019 and June 2020, 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.



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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