



FINANCIAL STABILITY REPORT



2020
MAY

‘...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 and the Directorate for Fiscal and Competitiveness Analysis, under the general direction of Gergely FÁBIÁN, Executive Director for Financial System Analysis and Lending Incentives.

The Report was approved for publication by Márton NAGY, Deputy Governor.

The Report incorporates the Financial Stability Council's valuable comments and suggestions following its meetings on 28th April and 15th May 2020, and those of the Monetary Council following its meeting on 12th May 2020.

This Report is based on information in the period to 30th April 2020. Since data frequency is divergent through the analyses, the analysis horizons may also alter.

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Executive Summary

Leaving behind the legacy of the 2007-2008 crisis, the Hungarian banking system is prepared to face the challenges likely to result from the COVID-19 pandemic with healthy balance sheets and adequate capital and liquidity reserves. Based on our stress test exercise, most of the banks would require no capital replenishment even if a very severe economic path were to materialise. At the same time, the real economic impacts of the coronavirus will have a significant negative effect on the banking system and, consequently, the financing of economic agents.

The spread of the coronavirus presents an unexpected and novel shock for the world economy struggling with multiple vulnerabilities. The pandemic – which originated in China, a country deeply integrated into the global production chain – initially caused disruption in production chains leading to a supply-side shock. With the spread of the pandemic, the government restrictions introduced as precautionary measures drastically altered consumer behaviour, and demand collapsed in numerous sectors (in particular tourism, catering, leisure and commerce related enterprises). In order to offset the negative economic impacts, many countries took extremely large-scale fiscal and monetary measures. Global economic growth may drop significantly in 2020, while the scale and rate of a post-pandemic recovery will essentially depend on the effectiveness of the announced government schemes and the lending capacity of the financial system.

The Hungarian financial system is prepared to face the coronavirus-related negative impacts in a fortified state. The balance sheet of the Hungarian banking sector has improved tremendously in recent years. Liquidity reserves are abundant, while profitable operations and the macroprudential capital buffers built up in recent years have led to a robust capital position. Lending risks have been reduced thanks to a healthier loan portfolio structure and low-level indebtedness. The debt cap rules introduced in 2015 put an end to excessive indebtedness in retail lending. Thanks to the conversion of retail foreign exchange loans into HUF loans, the exchange rate vulnerability of the retail loan portfolio ceased to exist, and by the end of 2019 loans with an initial interest rate fixation of over one year accounted for more than 50 per cent of mortgage loans outstanding. The share of project loans has declined significantly within the corporate loan portfolio. Non-performing loans in both the household and corporate segments reached their pre-2008 rates. Consequently, supported by the government and central bank measures, Hungarian banks have successfully overcome the difficulties of the previous crisis and are prepared to weather the impacts of a shock similar to the present one.

About one-third of the banks' loan portfolios can be considered vulnerable due to coronavirus-related effects. The credit institutions may face challenges due to loans in the sectors particularly affected by the pandemic situation. Debt servicing may be problematic for companies suffering from massive revenue losses. Adapting to the circumstances, the affected companies could start reducing workforce as a cost-cutting measure and therefore, along with increasing unemployment, debtors employed these sectors may also soon face repayment difficulties. Based on our estimation, the volume of the potentially problematic loan portfolio could reach one-third of the total stock.

The volume of new loans and growth of the existing portfolio may decline significantly as a result of the pandemic. Supply and demand for loans are expected to drop substantially in the coming months due to increased uncertainty. As regards companies, demand for investment loans may fall significantly, along with a potential rise in demand for short-term loans. On the other hand, the increasingly uncertain labour market situation and the decline in personal interactions may reduce demand for household loans. Banks' risk appetite may decline in both segments as a result of the deteriorating economic outlook, also reducing the credit supply. However, due to the substantial bank reserves, the loan portfolios are not expected to contract permanently as was the case in the period between 2008 and 2014, even if a deeper economic downturn occurs.

The profitability of the banking system may drop significantly in 2020, but based on our stress test exercise the sector will be able to cope even with a major setback. Every issue of the Financial Stability Report presents how the banking system would cope with the impacts of a highly negative stress scenario. Taking into account the high-level uncertainty of the real economic and financial forecasts, the current report estimates the impacts of two stress scenarios. Based on

our results, the pandemic will significantly influence the profitability of the banking system, but most of the Hungarian banks will require no capital replenishment even if a more severe stress path evolves.

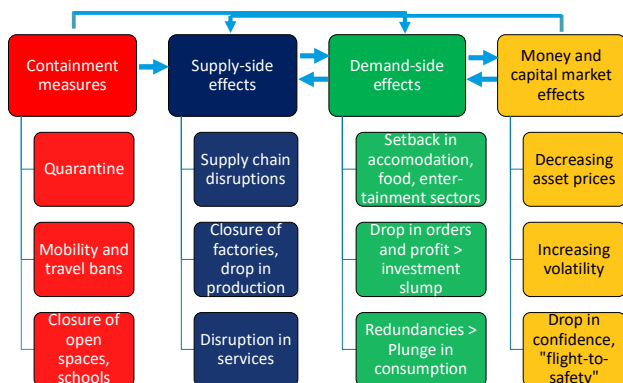
In terms of stability, it is essential that the behaviour of the banking system not exacerbate the problems emerging in the real economy. Several measures by the government and the Magyar Nemzeti Bank aim to prevent procyclicality in the banking system, i.e. the mutually reinforcing negative interactions of the financial and business cycles. The main goal of these measures is to minimise the immediate pandemic-related stresses, to prevent lasting, long-term economic losses and to facilitate the fastest possible reopening of the affected sectors.

The first round of government measures was aimed at mitigating the immediate liquidity tensions. On 16 March 2020, the Magyar Nemzeti Bank announced a moratorium on loans disbursed under the Funding for Growth Scheme (FGS) and a proposed moratorium for other loans as well. On 18 March, the government decided to temporarily suspend corporate and household loan repayments until the end of 2020 in line with the MNB proposal. This measure significantly eases the liquidity tensions of indebted economic agents, helping to prevent disruptions in production chains and work processes in the economy as a result of large-scale corporate bankruptcies and layoffs. If fully utilised, the above measure could bring approximately HUF 3,600 billion worth relief for the households and companies in terms of loan repayment. The central bank supports the liquidity of the banking system by various means, fully ensuring the liquidity requirements of the individual banks in the coming months. The MNB will be able to flexibly manage the individual liquidity needs over the coming months by launching a collateralised lending facility with multiple maturities, extending the scope of acceptable collaterals with large enterprise loans and releasing the minimum reserve, among other things.

Restarting the economy will be supported by government and central bank lending schemes during the moratorium period as well. The Home Purchase Subsidy Scheme for Families and the Prenatal Baby Support loans could potentially support retail borrowing, while the FGS Go! programme announced by the MNB with a total volume of HUF 1,500 billion, and the loan and guarantee programmes of the Hungarian Development Bank and Eximbank could support the corporate segment. In addition, the central bank supports banks' lending capacity by releasing the existing capital buffers, temporarily waving the capital conservation buffer, the systemic risk buffer (SyRB) requirements, capital buffer of other systemically important institutions (O-SII) and Pillar 2 (P2G) recommendations. The government's loan programmes may help to maintain loan portfolio growth in the positive range, but due to the reduced volume of new loans growth will be markedly lower and is expected to be in the 6-10 per cent range for corporate loans and in the 5-8 per cent range for household loans in 2020, compared to the double-digit annual growth rates typical in 2019.

1 Summary: The Hungarian banking system has sufficient reserves to withstand the coronavirus shock

Chart 1: Impact of the coronavirus on the economy



Source: OECD, MNB

Table 1: Development of certain macroeconomic indicators

	Indicator (starting date of data)	Negative record of this year	Value preceding the crisis	Previous negative record	Date of previous negative record
Uncertainty	Dispersion of GDP quarterly growth forecasts (gap btw. 25th-75th percentile, percentage points) (1970-)	17.5	~2	~5	1975 Q1
Commodity	Oil price (Brent, barrel, USD) (1987-)	9.1	61	9.1	Dec 10, 1998
Global supply chain indicators	Baltic Dry Index (point) (1985-)	418	1823	290	Feb 10, 2016
	Dow Jones Global Shipping Index (point) (2005-)	238.7	388.2	388.2	Sept 30, 2019
USA	Total industrial output (MoM, %) (1919-)	-5.4	-0.3	-10.4	Aug 1946
	Retail sales (MoM, %) (1992-)	-8.4	-0.4	-3.9	Nov 2008
	No. of produced cars (thousands) (1967-)	1 696	2 565	1 290	Jan 2009
	No. of new unemployment claims (thousands) (1967-)	6 867	218	680	Sept 18, 1982
China	GDP growth (y-o-y, %) (1992-)	-6.8	6	6.4	2009 Q2
	Retail sales (MoM, %) (1995-)	-13.2	0,73	0.14	Jan 2013

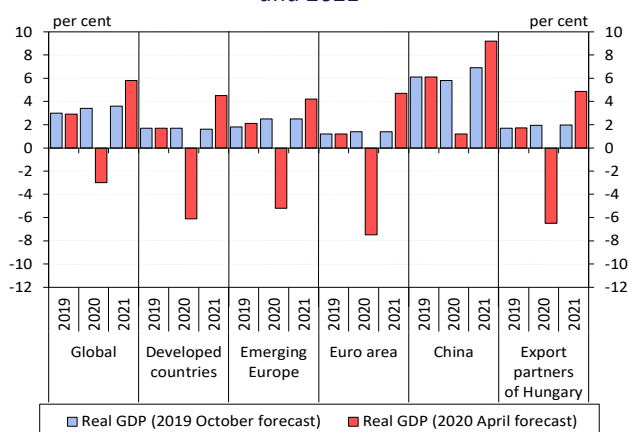
Note: The Baltic Dry Index measures the shipping cost of maritime freight forwarding, while the Dow Jones Global Shipping Index shows the performance of maritime shipping companies. The pre-crisis figure refers to 2019 Q3, or its last day in the case of daily data. Source: Thomson Reuters Datastream, Oxford Economics, Trading Economics, Financial Times

The economic impact of the coronavirus epidemic differs considerably from earlier experiences. While the 2007–2008 financial meltdown spread from the balance sheet of financial institutions to the real economy, the current crisis began on the supply side of the economy. Due to the disease that first started to spread in China and the precautionary measures introduced, the activities of many companies relying on Chinese imports came to a halt in both advanced and developing countries. As the pandemic became global, numerous sectors – in particular accommodation and food service activities, retail trade, transportation and storage as well as arts, entertainment and recreation – saw a massive drop in demand on account of the containment efforts (Chart 1). Owing to companies’ adjustment, the number of layoffs quickly increased, leading to a further drop in demand.

The spread of the coronavirus caused an unprecedented real economy shock. The coronavirus, which appeared in China in November 2019 and then spread all around the world in the first quarter of 2020, dealt a sudden and unparalleled blow to the global economy. This is also reflected by the fact that several economic indicators have hit historic lows in recent months (Table 1). Since it started publishing GDP data in 1992, China suffered its first economic contraction in 2020 Q1, while the number of new claims for unemployment benefits reached unprecedented levels in the USA. The oil price also plunged to an all-time low as demand shrank and storage capacities reached their limits. According to the analysis by Oxford Economics, hotel and restaurant reservations, entertainment industry ticket sales and mobility indices have plummeted to a fraction of the level seen before the coronavirus crisis, reflecting the immediate and dramatic impact of the measures restricting physical mobility.

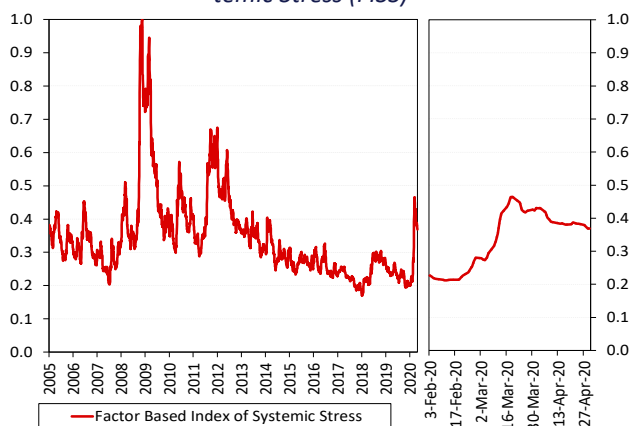
The sudden emergence of the coronavirus epidemic has drastically altered the macroeconomic forecasts for the years to come. Due to disruptions in global supply chains resulting from Covid-19, the suspension of production and services and the introduction of isolation measures, demand sagged immediately and considerably, with a major impact on the global economy. As the virus spread, projections for global economic growth deteriorated drastically. According to the IMF’s forecast on 14 April, the world

Chart 2: Real GDP growth and forecast between 2019 and 2021



Note: In the case of Hungary's export markets, the growth rate of the countries was weighted with their share in Hungarian exports. Source: IMF WEO

Chart 3: Development of the Factor-based Index of Systemic Stress (FISS)



Note: For methodological details, see Szendrei, T. - Varga, K. (2017): FISS - A Factor-Based Index of Systemic Stress in the Financial System. MNB Working Papers 9, Magyar Nemzeti Bank. Source: MNB

Table 2: Certain indicators of the Hungarian banking system in 2008, 2012 and 2019

	2008	2012	2019
Liquid assets / total assets	10%	17.4%	30.9%
Credit / deposit ratio	152%	114%	75%
Foreign liabilities / total liabilities	33.9%	20.5%	12.7%
Capital adequacy ratio of the banking sector (consolidated in brackets)	11.2% (12.9%)	15.8% (16.3%)	20.6% (17.2%)
Rate of loans overdue for more than 90 days	4.6%	19.5%	2%
Net NPL / own funds	16%	40%	2%
Return on equity	11.3%	-5.7%	11.6%
Operating expenses as a ratio of total assets	2.4%	2.2%	2%
Ratio of foreign currency loans - household loans	67.0%	56.0%	0.5%
Proportion of variable rate mortgages - households	77.5%	83.4%	48.7%
Corporate credit dynamics (year/year)	6.5%	-4.7%	13.9%
Retail credit dynamics (year/year)	19.1%	-9.8%	16.7%

Note: The proportion of variable-rate mortgages in 2008 and 2012 is based on expert estimates. Source: MNB

economy could shrink by 3.3 per cent in real terms in 2020 compared to the previous year, whereas the January projections foresaw 3-per cent growth (Chart 2). The steps to slow the spread of the pandemic entailed breaks in supply chains, logistic issues, involuntary changes in consumer habits and thus a complete paralysis of certain services. The abrupt shift in economic circumstances was also reflected in the exceptionally steep decline in economic sentiment indicators. To alleviate the mounting problems, many countries announced large-scale fiscal and central bank programmes, which are detailed in Boxes 2 and 3 of this Report. The success and effectiveness of these programmes will be key in how long the damage caused by the pandemic will persist in the individual economies.

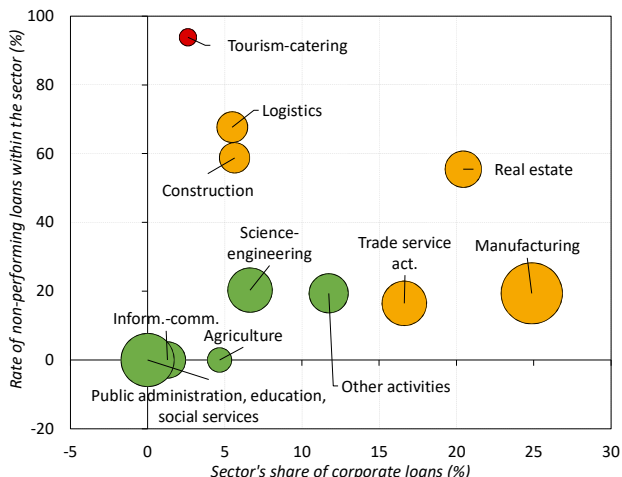
Financial market tensions rose considerably due to the pandemic, before starting to subside gradually from the second half of March.

As the economic impact of Covid-19 became increasingly widespread, the market's risk appetite declined strongly around the world. This led to foreign capital withdrawal in several areas of the world including emerging regions e.g. the CEE countries, which had an intense impact on several asset classes. Emerging country currencies started to depreciate, exchange rate volatility increased, stock market indices plummeted, and government securities market yields and country risk premiums rose. Hungary's financial stress index, which captures domestic market tensions by compiling the information from 17 variables into a single indicator, jumped sharply higher in March, but remained well below the levels seen in 2008–2009 and 2011–2012. Partly due to international intervention and Hungarian central bank measures, the index started to decline gradually in the second half of March, signalling easing liquidity and market tensions (Chart 3).

The crisis also profoundly affects the Hungarian banking system, but the sector has significant reserves.

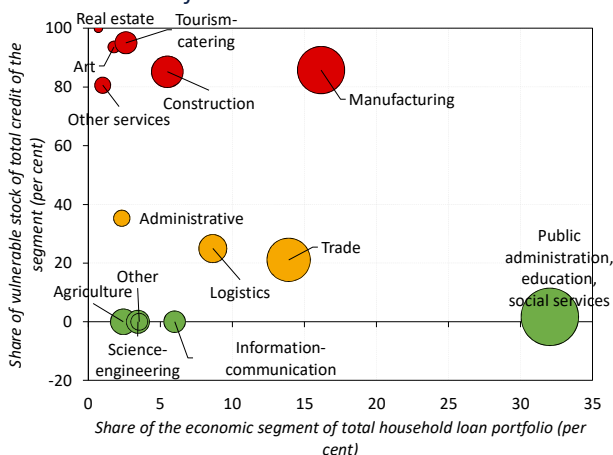
The liquidity and capital reserves of the financial system have increased significantly in the past decade, and therefore the sector can make a major contribution to mitigating the economic shock caused by the pandemic. The economic policy measures (especially the forint conversion of household FX loans), the new, stringent requirements on new lending (fair banking requirements, debt cap rules, certified consumer-friendly products, supervisory executive circulars and recommendations) as well as the establishment of the macroprudential regulatory framework all contributed to reducing Hungary's external vulnerability in terms of the structure of outstanding debt and the banking system (Table 2). However, this exceptionally large economic shock will also impact the banking system: the credit risk on the

Chart 4: Role of vulnerable sectors in corporate debt



Note: Based on 2019 data for the credit institution sector. Vulnerable loans are loans taken out by debtors with vulnerable activities (Hungarian NACE Rev. 2). Bubble size corresponds to the value added of the whole sector. Source: MNB, NTCA

Chart 5: Role of vulnerable sectors in household debt



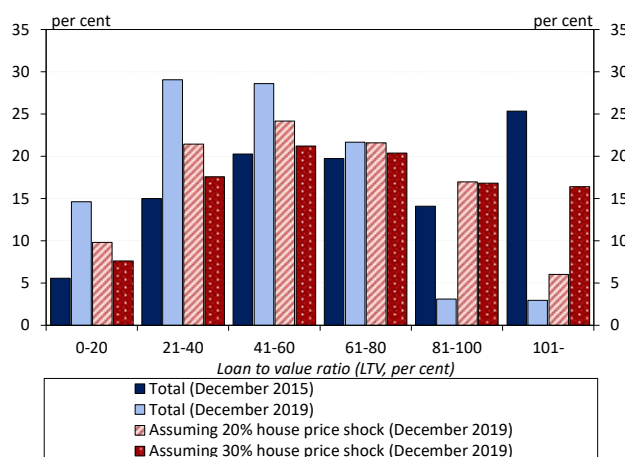
Note: Based on 2017 data. Vulnerable loans are loans taken out by debtors with vulnerable professions. Bubble size corresponds to number of workers in the sectors. 'Other activities' comprise the mining, energy, water supply and waste management as well as the financial and insurance activities sectors. No vulnerable professions were identified in any of these. Source: Central Administration of National Pension Insurance, MNB

debt of the companies operating in vulnerable sectors and those employed by such firms will grow, while banks' revenues will contract in the overall deteriorating economic environment. However, banks are well prepared for this in light of their adequate reserves and low ratio of non-performing loans.

Approximately one-third of banks' outstanding loans are related to vulnerable sectors. Within corporate debt, the share of the industries most exposed to the effects of the coronavirus is roughly 9 per cent (HUF 700–800 billion), while the loans granted to agents in other affected sectors (in particular the vehicle industry) also amount to a substantial portion, 23 per cent, of total debt (Chart 4). In the case of households, the proportion of the outstanding borrowing of those working in vulnerable positions (typically in manufacturing, tourism and hospitality and the real estate and construction sectors) amounts to about 35 per cent of total household loans (Chart 5). To avoid temporary repayment issues, the government – acting in line with the Magyar Nemzeti Bank's recommendation – declared a moratorium on loan repayments, affecting the loan contracts of both non-financial enterprises and households. The law states that debtors may suspend debt servicing until the end of 2020, and repay the interest payments accumulating in this period in equal instalments over the maturity, which will typically be extended by a couple of months. For more details on the moratorium on payments and other government and central bank measures affecting lending, see Boxes 5 and 6. Although the outstanding borrowing of the sectors and employees most exposed to the impact of the coronavirus is considerable, relative to GDP the aggregate indebtedness of households and corporations is among the lowest in the EU, which is favourable from the perspective of the vulnerability of the Hungarian economy. In other words, the coronavirus crisis hit the Hungarian credit market in a stable position which was not characterised by overheating.

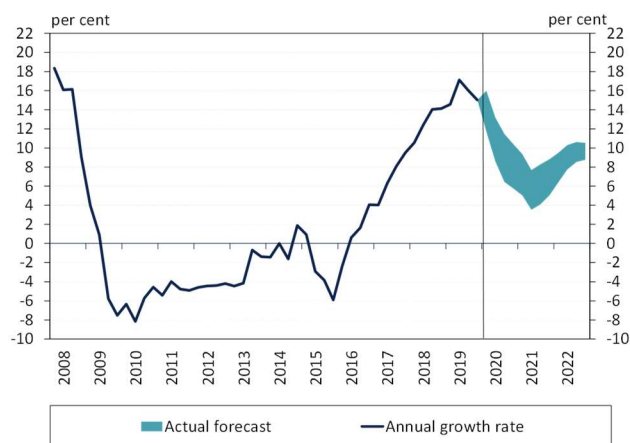
The number of housing market transactions fell sharply, and a potential price drop could also affect banks' collateral value. In March 2020, the number of housing market transactions dropped by 30 per cent year-on-year at the national level. Taking into account only the last week of March, the decline amounted to 64 per cent in Budapest and 58 per cent across the country. A contraction of the housing market and potential house price depreciation could also affect banks' collateral value. However, the risks faced by banks are limited: even a 30-per cent depreciation in house prices would only push 16.4 per cent of

Chart 6: Distribution of outstanding mortgage loans by the current and the shock LTV ratio



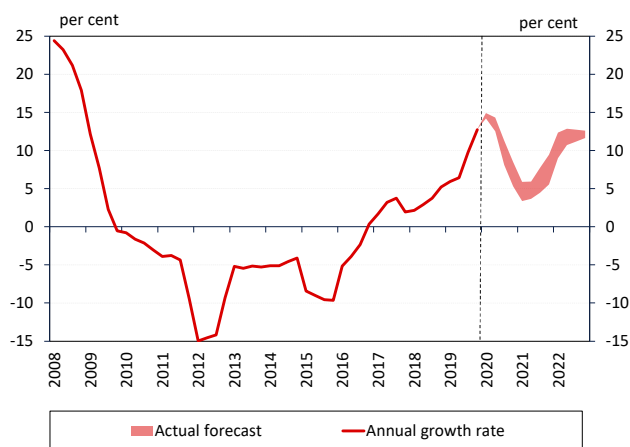
Note: Distribution by volume of contracts. Source: MNB

Chart 7: Projection for the growth rate of total corporate debt



Note: Transaction-based, year-on-year data. Source: MNB

Chart 8: Household lending forecast



Note: Transaction-based annual growth rate. Adjusted for Lombard credit transactions in 2019 Q3. Source: MNB

outstanding mortgages to above the 100-per cent loan-to-value ratio (Chart 6).

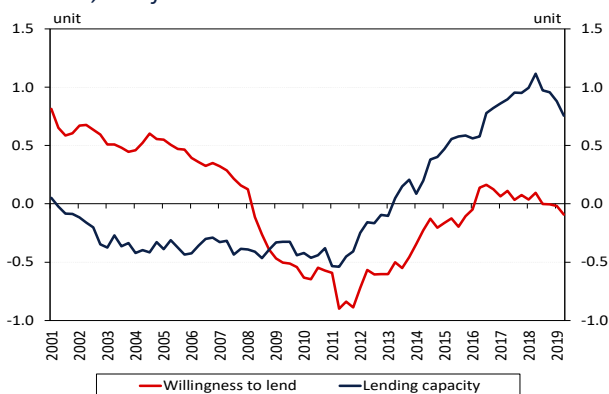
New lending is expected to contract, due to both demand- and supply-side factors, but the market may be supported by government and central bank programmes.

Credit growth forecasts were revised considerably lower on account of the pandemic, in both the corporate and the household segments (Chart 7, Chart 8). 2020 may see the growth rate drop from the current double-digit territory to 6–10 per cent in corporate lending and to 5–8 per cent in household lending. New lending may be hindered by the tightening supply conditions and the cautious behaviour of borrowers. The moratorium on payments suspends the payment obligations of debtors in an overstretched financial position and thus reduces the amortisation of outstanding loans. Nevertheless, the interviews conducted with banks' credit executives suggest that a significant portion of debtors (20–40 per cent of households and 30–50 per cent of companies) may continue debt servicing. Lending may be buttressed by government and central bank programmes. In corporate lending, preferential financing can be obtained thanks to the launch of the FGS Go! programme with an allocated volume of HUF 1,500 billion and the schemes of the Hungarian Development Bank and Eximbank (Box 5). As regards household credit, continued borrowing related to the family home creation allowance and the prenatal baby support scheme may support lending: these products covered 35–40 per cent of the total household market even before the crisis. After the pandemic has passed and isolation measures are lifted, the economy is expected to recover in a gradual manner, which may be accompanied by positive credit dynamics (between 4 and 9 per cent) in 2021, while by 2022 we once again expect double-digit growth in loans outstanding.

Banks' robust lending capacity may facilitate a fast recovery. Strong bank balance sheets and the adequate liquidity and capital position can help banks assist in restoring economic processes with intensive lending after the public health situation improves. While Hungarian banks' low lending capacity hindered the provision of support to the real economy through bank loans when the 2008 crisis erupted (Chart 9), the capital buffers built up in recent years and the available liquidity reserves are projected to enable this in 2021. Bank executives' business outlook was assessed in the Market Intelligence survey, the results of which are detailed in Box 1.

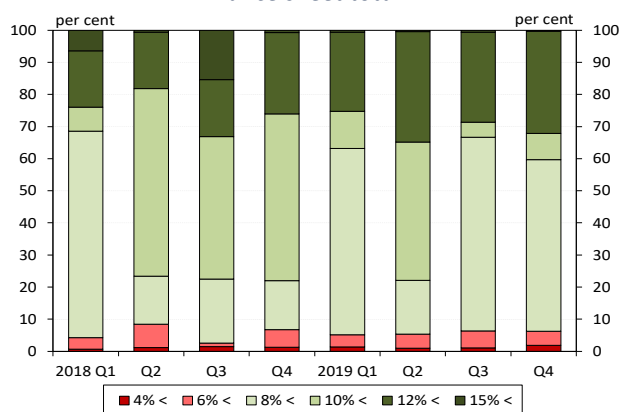
Thanks to profitable operation in recent years, most banks have substantial capital reserves. The Hungarian

Chart 9: Development of the willingness and ability to lend, two factors in the Financial Conditions Index



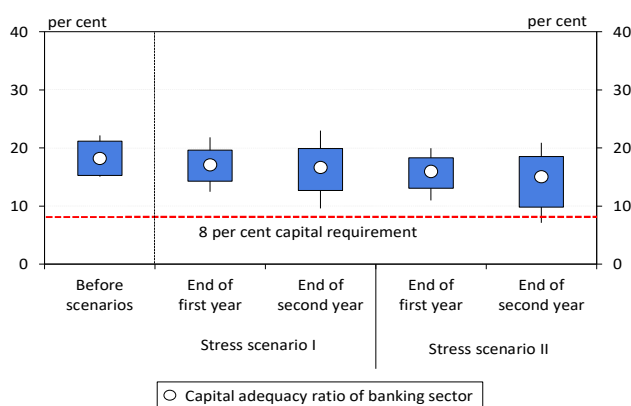
Note: The specific value at each point in time is the divergence from the historical average measured in the standard deviation of the factors. Source: Hosszú, Zs. (2016): The impact of credit supply shocks and a new FCI based on a FAVAR approach, MNB Working Papers 2016/1, Magyar Nemzeti Bank

Chart 10: Distribution of credit institutions according to the level of own funds above Pillar I weighted by the balance sheet total



Note: The categories indicate the level of own funds as a ratio of the total risk exposure value. Own funds include total interim or year-end profits as well. Source: MNB

Chart 11: Distribution of the capital adequacy ratio based on the number of banks for the two stress scenarios



Note: Vertical line: 10–90 per cent range; rectangle: 25–75 per cent range. Sources: MNB

credit institution sector’s profits amounted to approximately HUF 2,100 billion between 2016 and 2019. Owners reinvested 70 per cent of the profits, and therefore own funds increased by 50 per cent in this period. In the spirit of continued preparation for the effects of Covid-19, the central bank called on banks to suspend dividend payments so that all of the profits from 2019 can enhance capital. In addition to profitable operation, capital adequacy is also aided by the MNB’s regulatory easing measures introduced in the present situation. Banks were granted a temporary exemption from the requirements for the capital conservation buffer, the systemic risk buffer (SyRB) and the capital buffer of other systemically important institutions (O-SIIs), and the Pillar 2 capital guidance (P2G) also does not need to be met. Analysis of the distribution of the buffers in excess of the 8-per cent Pillar 1 requirement shows that institutions comprising 94 per cent of the banking system’s balance sheet total have buffers of over 8 per cent relative to total risk exposure (Chart 10). In other words, the overwhelming majority of institutions have sufficient capital to withstand the losses arising on account of the coronavirus, which mainly stem from diminishing interest income and rising loan loss provisioning.

According to our stress test, the sector is capable of weathering the effects of even a significant economic contraction. Every six months, the Financial Stability Report quantifies the impact of a severe, but plausible adverse stress scenario on the Hungarian banking system. The May 2020 Report takes into account the considerable uncertainty in real economy and financial forecasts and presents two stress scenarios. According to our calculations, most of the banking system had adequate liquidity buffers at the end of 2019 to fulfil the regulatory requirements even in the event of simultaneous severe liquidity shocks. Based on our solvency stress test, the capital adequacy ratio dips below 8 per cent at 10 per cent (based on the number of institutions) of credit institutions by the end of the two-year time horizon in the more severe stress scenario (Chart 11), which accounts for around 9 per cent of the sector, taking institutions’ size into consideration. At the sector level, a capital injection of HUF 106 billion would be necessary to reach the actual overall capital requirement, which is manageable from a financial stability perspective.

BOX 1: WHAT DO BANKS EXPECT FROM THE CORONAVIRUS CRISIS? THE BUSINESS OUTLOOK OF HUNGARIAN BANKS FOR 2020 BASED ON THE MARKET INTELLIGENCE SURVEY

Within the framework of 13th ‘Market Intelligence’ survey conducted this year, the MNB contacted nine major Hungarian commercial banks to learn about credit institutions’ business plans for 2020 and their views on the sector, the macroeconomic environment and the financial market, as well as the risks they consider the most important. This year, due to the coronavirus pandemic, banks’ business planning is characterised by substantially higher uncertainty compared to the past.

According to Hungarian bank executives, the performance of the sector this year is fundamentally determined by how long the restrictions imposed due to the pandemic remain in place, since credit institutions’ activities have been profoundly impacted as the economy ground to a halt. Although the moratorium on loan repayments introduced in March helps maintain the volumes of outstanding amounts of loans, banks expect declining credit growth due to the slowdown in economic activity, the deteriorating labour market situation and the uncertain investment sentiment. Demand for liquidity-supporting schemes (working capital loans) will definitely be strong, but a contraction is expected in investment and project loans on account of the postponement of new investments. Banks welcomed the fact that starting from April SME sector lending will also be bolstered by the FGS Go!, a new phase in the MNB’s Funding for Growth Scheme. The FGS Go! is expected to be dominated by working capital loans and refinancing, but new investments may also gain momentum in the last third of the year. This is because the automation of production may accelerate in SMEs as well, on account of the coronavirus epidemic. In household lending, prenatal baby support loans and personal loans will remain key drivers, while banks expect to see a drop in demand for mortgages and vehicle loans.

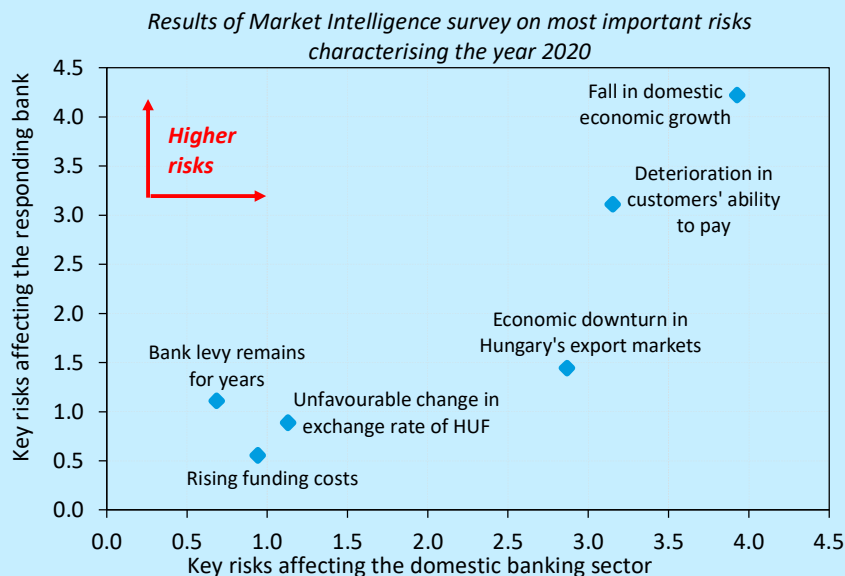
Banks forecast profitable operations in 2020, although almost all respondents foresee a major decline in profitability. According to the responses in the ‘Market Intelligence’ survey and based on our estimate resting on banks’ expectations,¹ the 2020 pre-tax profits of the banking sector may be between HUF 180 billion and 280 billion (equivalent to a return on equity (ROE) between 3 and 6 per cent across the sector), which would be considerably lower than in earlier years. At the level of individual institutions, banks expect to realise roughly the half of their 2019 profits on average, so their ROE could vary widely between 2.5 and 10.5 per cent. Banks underlined that the coronavirus pandemic presents a live test of the completed digital developments, and it is clear that now a competitive edge is enjoyed by those market participants that had already shifted their sales processes to digital channels and easily transitioned to the home office. Owing to the effects of the coronavirus epidemic, it has become vital to speed up the digital transformation across the entire banking sector, which requires a more flexible legislative environment.

Banks achieved a breakthrough in cleaning their balance sheets in recent years, by successfully reducing the share of non-performing loans (NPL ratio). Since the moratorium on payments introduced in March practically excludes the possibility of a default in the case of the affected loans, banks do not anticipate a substantial increase in defaulting loan portfolios this year, and thus the proportion of such loans could remain under 5 per cent in 2020.

In the sectors most affected by Covid-19, where demand has dropped dramatically or restarting production may take longer due to paralysed supply chains, banks expect to have customers which need long-term recapitalisation with the involvement of bank loans. Nonetheless, several firms have already used their available collateral options for investments in recent years, and therefore they can only take out new loans with further institutional guarantees.

¹ The Market Intelligence survey was conducted with the participation of nine institutions, but the profit expectations considering the effects of the coronavirus pandemic were only quantified by six. In our estimate for the whole banking system, the six responses were first aggregated then prorated based on the sector-wide pre-tax profits for 2019.

After processing credit institutions' responses, the risks that pose the greatest threat to the banking system's operation have been outlined, and, in many respects, they differ markedly from those seen in past years. First, risks varied little this year, evident from the fact that more than half of the respondents ranked the same risk first for both the entire banking system and at the level of individual institutions. Second, new risks have emerged on the risk map, while the dominant risks from previous years (bank levy, ultra-low interest rate environment) are now ranked lower. This year, the risks posing the gravest threat to the whole sector were ranked by banks in descending order as follows: 'fall in domestic economic growth', 'deterioration in customers' ability to pay', 'economic downturn in Hungary's export markets', 'unfavourable change in the exchange rate of HUF', the 'rising funding costs' and 'bank levy remains for years'. There is no difference in the perception of threats at the level of the entire sector and of the individual institutions in terms of the ranking of the three largest risks. At the same time, respondent credit institutions (continue to) deem the persistence of the bank levy as a more serious risk at the level of individual institutions than for the entire banking system.

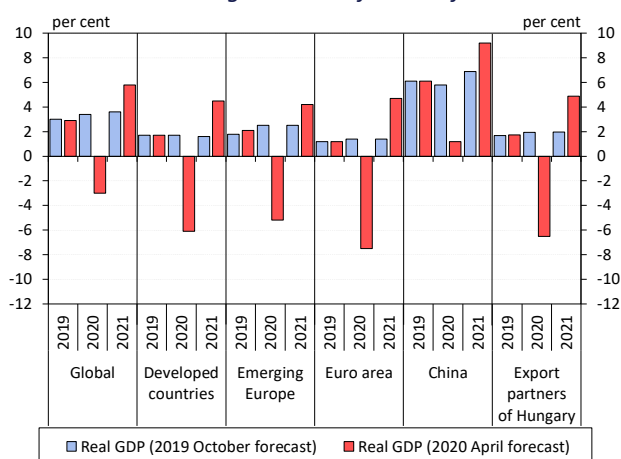


Note: Participants were required to select and rank top 5 risks threatening domestic banking sector, and being most challenging from point of view of their bank. In the case of risks threatening domestic banking sector, values were weighted with balance sheet total based market share of responding credit institutions. Source: MNB

2 International macro environment: Global slow-down, strong fiscal and monetary policy responses

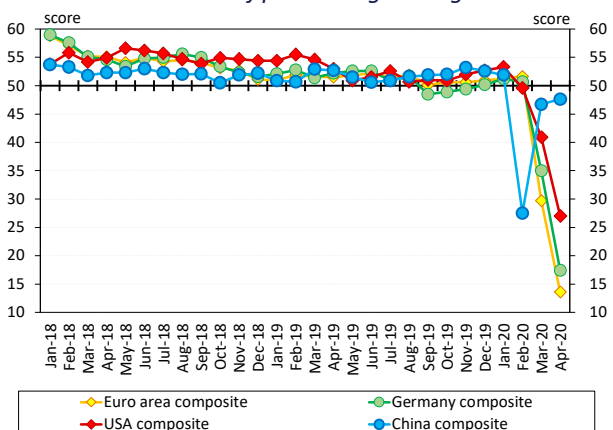
As a result of global interconnectedness, the rapid spread of Covid-19 and its spillover effects pose an unprecedented challenge to an already slowing global economy. The pandemic entailed a simultaneous supply- and demand-side shock due to the isolation measures, causing an immediate, massive fall in economic activity in most countries. It is uncertain how long a global recovery may take, depending on the extent of the contagion and the time necessary to combat it. Governments and central banks are meeting the challenges with unparalleled vigour and engagement, stimulating their economies with accommodative steps. Nonetheless, sovereign indebtedness could limit the room for manoeuvre in terms of interventions, despite the more flexible fiscal approach, and in some countries the heavy indebtedness of economic actors entails a larger repayment risk against the backdrop of a recession. The macroeconomic position of the CEE region is stable, but it is sensitive to the slump in its external markets (in particular Germany) and to the flagging domestic demand caused by the containment measures. Banks' fundamentals are typically strong, but the permanently low interest rate environment and the contraction in lending activity further squeezes their profits, and the portfolio quality of the exposures in vulnerable sectors could also deteriorate.

Chart 12: Real GDP growth and forecast for 2019 – 2021



Note: In the case of Hungary's export markets, the growth rate of each country was weighted by its share in Hungarian exports. Source: IMF WEO

Chart 13: Evolution of purchasing managers' indices



Note: Chinese data stems from the Caixin/Markit survey, covering SMEs. Data for the USA, Germany and the euro area are

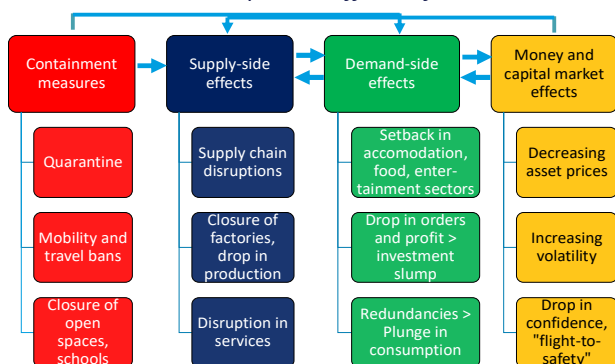
2.1 Global developments: massive downturn, uncertain path to recovery

Global economic growth is expected to decelerate significantly in 2020. Due to the disruptions in the global supply chains caused by the pandemic, the suspension of production and services and the introduction of isolation measures, demand plunged immediately and considerably, with a major effect on the global economy. The unpredictable scope of the effects triggered by the coronavirus resulted in sharp downward revisions to economic forecasts (Chart 12). According to the IMF's projections, compared to the 2007–2008 global financial crisis (contraction of -0.6 per cent in 2009), the global economy could suffer an even larger decline this year (-3 per cent). The recession may be especially deep in advanced countries (-6.1 per cent), as the largest European economies (Germany, France, Italy, Spain) may shrink by 7–9 per cent on account of the high number of infections and the wide-ranging measures introduced to contain them. However, isolation measures and the temporary suspension of production may also substantially curb growth in the euro area as a whole and the CEE region.

There are very significant uncertainties regarding the intensity of contagion effects and the duration of the economic recovery. The decline in economic sentiment indices temporarily stopped at the end of last year. Nevertheless, expectations of a slow recovery in external demand were upended by the rapid and extensive spread of the coronavirus that appeared in China in November. As production ceased due to the virus, the Chinese purchasing managers'

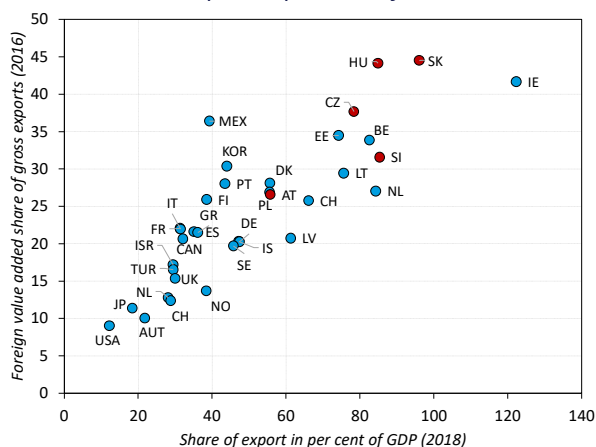
based on the IHS Markit survey. Seasonally adjusted data. Source: Thomson Reuters Datastream

Chart 14: Economic spillover effects of the coronavirus



Source: OECD, MNB

Chart 15: Foreign value added share of gross exports and export in per cent of GDP



Note: CEE countries are marked with red. Source: OECD

indices fell sharply in February, and the same happened with the outlook of the manufacturing and services sectors of advanced countries in March. In one positive development, the Chinese composite purchasing managers' index rose strongly in March compared to the previous month (Chart 13), with the manufacturing purchasing managers' index actually returning to above the threshold for contraction (50 points). However, the duration of global stabilisation remains uncertain, as it depends on the spread of the infection, the duration of the related closures and shut-downs and the magnitude and effectiveness of the economic and healthcare measures. The bleak global outlook can also be seen from the fact that the composite indicators for the USA, the euro area and Germany all plunged even lower in April than in March.

The economic effects of the virus spilled over to the global economy through various channels simultaneously.

Although the epidemic was at first constrained to China, where it mainly resulted in a supply shock (disruptions in production), the effects of this were quickly felt in other countries due to the economic interconnectedness. After the global spread of the virus, containment efforts resulted in a decline in mobility everywhere, which led to shrinking demand almost in tandem with supply. First, this was mainly seen in tourism² and, as a result of the isolation measures ('social distancing'), also in the hospitality and entertainment industries, which require personal contact. This was followed closely by unfavourable labour market effects³ and falling corporate profit expectations, which decrease aggregate consumption and investments and also impact the financial intermediary system. Heightened risk-aversion amplifies both supply- and demand-side effects (Chart 14).

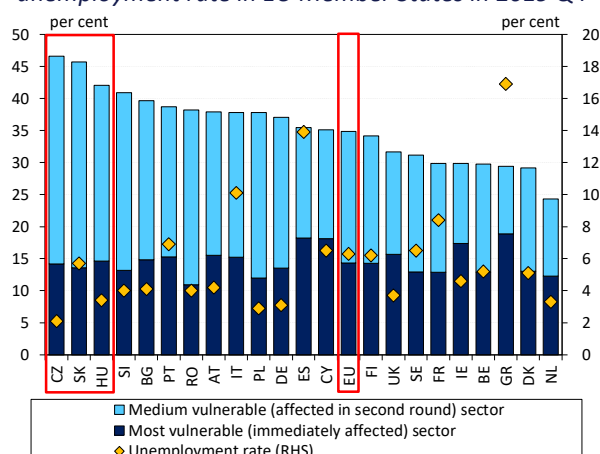
Countries' vulnerability and the extent of the shock partly depend on the economic structure.

Based on the significance of exports and the import content of exports, several European countries (including the CEE region) are especially exposed to disruptions in global supply chains and slowdowns in external markets (Chart 15). However, the value added of the tourism sector, which collapsed as mobility declined, is exceptional in the Mediterranean region, which is also struggling with high levels of infection. The

² According to the March prognosis of the Mobility Market Outlook, the revenues from global tourism in 2020 could come in 17 per cent lower than last year.

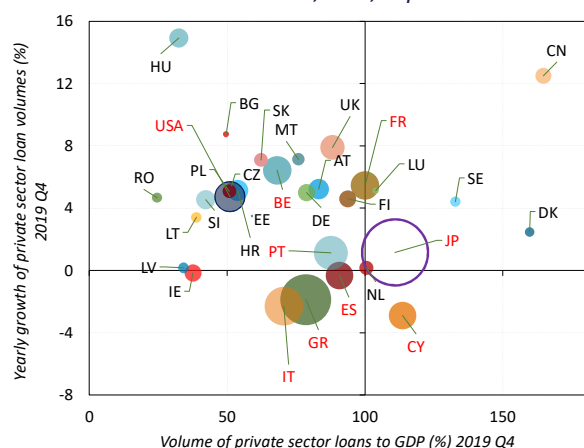
³ According to Capital Economics, on the week ending on 21 March, initial unemployment benefit claims in the USA skyrocketed from 211,000 to 3.28 million, and another 6.6 million Americans requested unemployment benefits the next week. By the end of April, more than 30 million people had lost their jobs in the country. In the UK, the number of benefit claims rose to 1 million at the end of March. According to the data from the European Trade Union Confederation (ETUC), at least one million euro area workers were laid off in the last two weeks of March.

Chart 16: Share of workers in vulnerable sectors and the unemployment rate in EU Member States in 2019 Q4



Note: 15–64-age bracket. No sufficiently detailed breakdown was available for Estonia, Croatia, Latvia, Lithuania, Luxembourg and Malta. Most vulnerable sectors are accommodation, food service activities, transportation, storage, tour operation, arts, museums, libraries, theatres, betting, gambling, sports, publishing and other personal services. Moderately vulnerable sectors include construction and services related to real estate, the manufacturing of computers and electronic products, vehicle assembly, repairs and trade, textile industry, timber industry, rubber industry, glass industry, metal industry and furniture industry. Source: Eurostat

Chart 17: Debt-to-GDP levels and the evolution of private sector debt in the EU, USA, Japan and China



Note: The size of the bubble indicates the general government gross debt-to-GDP ratio (2019 Q4, in the case of China, data is for 2019 Q3). Member States with debt-to-GDP ratios exceeding 90 per cent are shown in red. In the case of the USA, China and Japan, data for the volume of private sector loans to GDP is for 2019 Q3. The colours are only used to distinguish the bubbles. Source: Eurostat, ECB, BIS, IMF, Fred, OECD

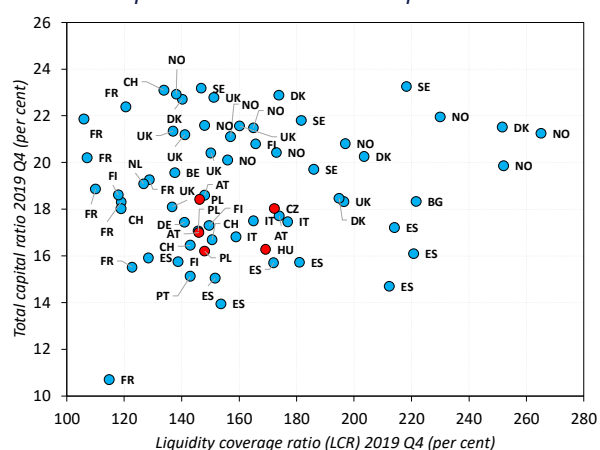
industries that were paralysed immediately on account of the measures aimed at combating the virus (food service activities, leisure, culture) account for a relatively larger part of consumption in certain Member States (not only in the Mediterranean region but also, for example, in Austria, Ireland and the UK). In most Member States, vulnerable sectors not only have high value added but also a large share of workers (Chart 16). For instance, in Mediterranean countries, a substantial proportion of workers are employed in the most exposed industries affected by the immediate decline as a result of the shutdown and the isolation measures, and the labour markets of these countries were hit by the shock in the context of already high unemployment. At the same time, in the CEE region, employment is also high in the medium-risk sectors affected by a drop in aggregate demand and disruptions in global supply chains, such as the vehicle industry, construction and manufacturing other than the food and chemical industry.

In certain countries, vulnerability is also compounded by high indebtedness. The deterioration in the labour market situation on account of the coronavirus and the fall in profits stemming from the unfavourable business climate may jeopardise the debt servicing capacity of over-indebted economic actors. Additionally, financing the high government debt, which continues to rise in certain countries due to the crisis management packages, may also be difficult (Chart 17). The search for yield and the stronger risk appetite seen in recent years led to an increase in the proportion of loans granted to riskier firms, and a significant portion of these loans could become non-performing in a global recession.⁴ Deteriorating profitability may lead to downgrades, which in turn could induce a rise in financing costs, especially in riskier segments. According to S&P, more than 10 per cent of non-financial corporations in the USA and roughly 10 per cent in Europe face the risk of default due to the coronavirus, mainly among companies with a rating of up to B-.

The economic crisis triggered by Covid-19 weighs on the profitability of European banks, but most banks have solid fundamentals. The persistently low interest rate environment, the fall in trading and investment revenue resulting from money and capital market turbulences and the expected increase in loan loss provisioning owing to mounting default risk impairs banks' often already low profitability. Declining profitability may also have a negative effect on

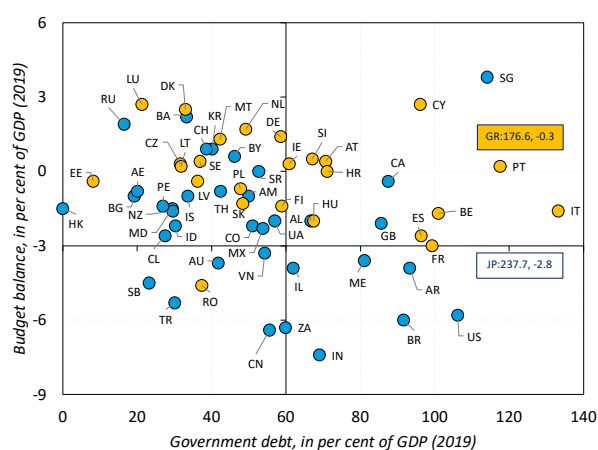
⁴ OECD data suggest that the global outstanding stock of non-financial corporate bonds amounted to USD 13,500 billion at the end of 2019 (more than twice the amount seen at the end of 2008 in real terms), with only 30 per cent having a rating of A or higher. The median of the debt/EBITDA increased in all rating categories, standing at 2.1 in the A segment, at 2.8 in the BBB and 5 in the B in 2017.

Chart 18: Development of liquidity coverage ratio and total capital ratio at certain European banks



Note: EU, UK, Norwegian and Swiss banks. CEE banks are marked with red. NO=Norway, CH=Switzerland. The chart presents those banks with total assets above EUR 500,000, where data was available. Source: SNL

Chart 19: General government net lending/borrowing and general government gross debt as a per cent of GDP



Note: Horizontal and vertical axes represent the Maastricht criteria. In the case of general government net lending/borrowing, data are from the 2020 April WEO. In the case of general government gross debt, data is stemming from the October 2019 WEO. General government gross debt is an IMF projection for 2019. Current EU countries are marked in yellow. Source: IMF

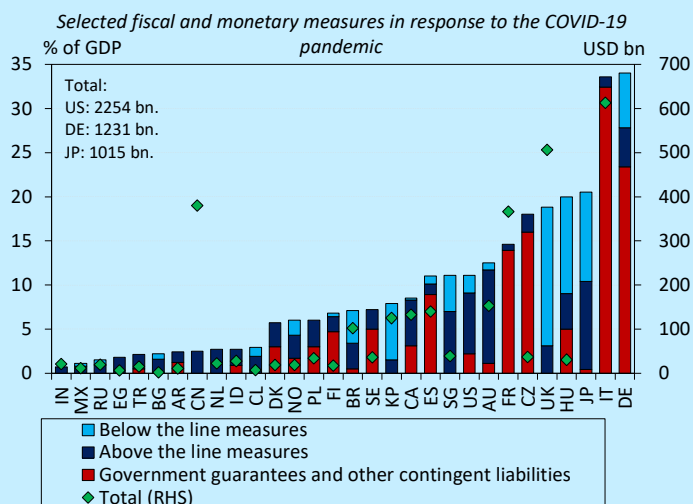
the capital position, potentially leading to a contraction in credit supply, which could be coupled with a slump in credit demand due to the more cautious attitude of borrowers. The diminishing bank valuations and recent downgrades may make funding even more difficult for institutions. However, most credit institutions' overall capital and liquidity positions are adequate (Chart 18) and are much stronger on average than before the outbreak of the 2007–2008 global financial crisis. As regards banks' strategies, it has become even more important to develop digital solutions in view of the epidemic, to maintain sales and customer service opportunities, especially for the banks that operate with a large network of branches.

The effects of the coronavirus can be mitigated with fiscal and monetary instruments, but ballooning government debt could entail future risks. Although the European Union temporarily tolerates fiscal flexibility to support the appropriate measures in the Member States, some countries are already heavily indebted. This could constrain the options for immediate fiscal intervention in certain Mediterranean or developing countries (Chart 19). Among the advanced economies, the government debt is high in Japan and the USA, but as capital flows in developed markets are less sensitive than in developing ones and demand is more stable for their government securities that are considered safe haven assets, on the whole they have more scope for intervention. An increasing share of central banks seek to promote fiscal measures with unconventional steps (Box 2). It must be noted, however, that although the global market and institutional attitude is fairly tolerant towards growing deficits, many countries could find themselves with little fiscal and monetary room for manoeuvre as the epidemic recedes. This not only constrains the options for future intervention but could also increase sovereign risks (as highlighted by the euro area crisis that followed the 2007–2008 financial meltdown a few years later), and this could have a major impact on the banking system, too (sovereign–bank nexus).⁵

⁵ Any yield increase (price drop) following, for example a sovereign downgrade, reduces the value of the government securities held in banks' books. This could exacerbate risks for instance for the Italian banking system, which holds in its books the securities of the Italian state burdened by massive government debt. For details, see the Financial Stability Report, May 2019, p.12. <https://www.mnb.hu/letoltes/financial-stability-report-2019may.pdf>

BOX 2: INTERNATIONAL OVERVIEW ON THE ECONOMIC POLICY MEASURES MITIGATING THE ECONOMIC FALLOUT FROM THE CORONAVIRUS EPIDEMIC

Economic policymakers sought to respond with unprecedented extent and speed all around the world to mitigate the economic impact of Covid-19. The measures introduced vary widely, and most countries have taken fiscal, monetary policy and macroprudential steps as well. The actions implemented most often are summarised in the following.⁶



Governments are striving to support employees and companies during the crisis with large-scale fiscal stimulus packages, especially in the sectors most affected by Covid-19. Since the coronavirus outbreak, many countries have supported firms by introducing targeted sectoral subsidies, tax deferrals, a moratorium on contribution payments and loan repayments or one-off assistance to sole proprietors. Typical solutions also include state loan guarantees and preferential loans. Workers are helped by wage supplements, housing subsidies, one-off cash assistance, the simplification of labour regulations and moratoriums on loan repayments. The key measures also include subsidies for the healthcare system. The largest package of policies (CARES Act), with an allocated volume of USD 2,300 billion, was adopted in the USA, but several European countries also passed major economic stimulus measures. In Europe, Germany stands out, where a direct fiscal stimulus programme of USD 168 billion was coupled with an economic stabilisation fund (WSF) of USD 650 billion. In Italy, a country ravaged by the epidemic, a relief package with a volume of USD 27 billion (Curia Italia), a moratorium on loan repayments and state guarantees were introduced to support economic actors. The UK's direct subsidy package of USD 83 billion was complemented with over USD 400 billion to aid British firms and large enterprises in the form of state-guaranteed loans and bond purchases. France extended aid to healthcare, distressed companies and workers, and is stimulating bank lending with state guarantees amounting to USD 350 billion.

Along with the advanced countries, Hungary's regional peers have also engaged in economic stimulus. Poland announced a programme with a total allocated amount equivalent to USD 34 billion, including a state guarantee scheme of USD 17 billion. The Czech Republic's government supports workers and firms in difficulty with USD 4 billion, and it has launched a state guarantee programme totalling USD 36 billion. Slovakia helps companies and workers with approximately USD 1 billion each month in the form of direct and indirect subsidies, and it also facilitates firms' borrowing by providing state guarantees. The Hungarian measures are detailed in Box 3.

Central banks have introduced numerous conventional and unconventional measures to preserve the stability of the banking system, stimulate the economy and support companies. Several institutions have lowered the *policy rate*, and some central banks – including the Fed and the central banks of Iceland, Canada, the UK, the Czech Republic and Poland – have done so repeatedly in a short time. Major central banks (e.g. in the USA, Japan, Australia) have increased the volume of their *repo* market operations to ensure the necessary liquidity. Furthermore, some central banks, such as the Fed, the Chinese central bank or, in the CEE region, the MNB, the Croatian and the Polish central banks also support counterparty institutions by easing the requirements on *minimum reserves*. The Fed expanded the list of central banks participating in its FX swap programme to ensure *dollar liquidity*, providing a total of USD 450 billion to nine central banks with this instrument. Many central banks announced *quantitative easing*: for example, the Fed announced unlimited

⁶ Sources of the measures mentioned in the box: IMF, ECB, ESRB, S&P.

asset purchases, and the ECB also launched an asset purchase programme with an allocated amount of EUR 750 billion (Pandemic Emergency Purchase Programme, PEPP). Moreover, the ECB also decided to accept as collateral securities falling below previous minimum credit quality requirements; therefore going forward it will accept papers with a rating of *BB* or higher in exchange for the liquidity provided to banks, if the given assets had met the expected rating requirement before 7 April (in the case of asset-backed securities, the change applies to papers with a current rating of *A-*, which can fall to *BB+*). The measure seeks to prevent a significant contraction of collateral availability entailed by rating changes resulting from potential downgrades caused by the pandemic. The Bank of Japan also stands ready to conduct unlimited government bond purchases within the framework of monetary stimulus. To boost corporate liquidity, several institutions – such as the Fed, the ECB, the Bank of England and the Canadian, Japanese, Finnish and Swedish central banks – added corporate bonds to the list of assets purchased by them or increased the amount allocated for this. Numerous central banks (in the English-speaking world, northern Europe and Asia) introduced programmes supporting SME lending to promote private sector lending.

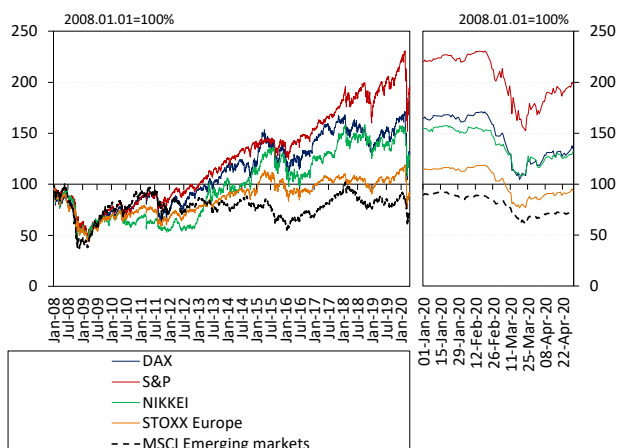
Summary table of the measures introduced in different countries	US	JP	DE	FR	IT	UK	HU	CZ	PL	SK	RO
Fiscal policy											
Corporate credit with state guarantee	x		x	x	x	x	x	x	x	x	x
Lending programme through state-owned bank(s)		x	x		x		x	x			
Reduction/deferral of the taxes of the affected sole proprietors and SMEs		x	x	x	x	x	x	x	x	x	x
Corporate wage cost subsidies	x	x	x	x	x	x	x	x	x	x	x
Transformation of labour and insolvency regulations			x			x	x			x	x
Provision or expansion of transfers or providing easier access to such	x	x	x	x	x	x	x	x	x	x	
Temporary APR cap on loan products							x				
Rental market intervention			x	x		x	x				
Monetary policy											
Policy rate cut	x					x		x	x		x
Quantitative easing	x	x	x	x	x	x	x		x	x	x
>Including corporate bond purchases	x	x	x	x	x	x	x			x	
Liquidity provision	x	x	x	x	x	x	x	x	x	x	x
Loan support programme	x	x	x	x	x	x	x	x	x	x	
Steps promoting financial stability, macroprudential and regulatory measures											
Moratorium on repayments	x		x	x*	x	“x”	x	x	“x”	x	x
More flexible NPL rules			x	x	x	x			x	x	
Easing of the capital buffer requirement	x	x	x, x	x, x	x, x	x	x	x	x	x, x	
Temporary prohibition on short sales of specific stocks			x	x	x						
Recommendation/requirement on suspending dividend distribution			x	x, x	x, x	x	x		x	x	

Note: Measures after 1 March. The Hungarian steps are shown in red. In the case of euro area members, x denotes national measures, while x means those introduced by the ECB. “x” denotes voluntary bank participation in the case of the moratorium on repayments, and a legal provision in the other cases. *In France, the implementation of the consequences of default was suspended on 25 March, for 3 months, with an additional month provided for remedying the missed performance. Source: ESRB, IMF, KPMG, S&P, Financial Times, dorsey.com, zbp.pl, esm.europa.eu

A key objective of the micro- and macroprudential measures is to provide liquidity to banks and the private sector and to support lending. The ECB seeks to maintain bank lending by allowing banks' capital and liquidity levels to temporarily sink below the Pillar 2 Guidance (P2G Directive), the capital conservation buffer (CCB) and the liquidity coverage ratio (LCR). Moreover, the ECB temporarily lowered the capital requirement on market risks for banks to provide greater flexibility for liquidity management. Besides the ECB, several other regulatory authorities (e.g. in China, Argentina and Russia) also aim for temporary 'capital easing', for example by treating the rules on default more flexibly for lower loan loss provisioning. The ECB is in talks with the European Commission on the establishment of a euro area 'bad bank' to assist in cleaning the NPLs accumulated during the 2008 economic crisis from banks' balance sheet before the proportion of non-performing loans starts growing again due to the coronavirus epidemic. Several regulators have introduced temporary easing in capital requirements to boost the amount available for lending (for example, numerous northern European and CEE countries lowered the countercyclical capital buffer or postponed its increase). By the end of April, 15 EU Member States, including Hungary, had declared a moratorium on repayments in law to preserve the solvency of the private sector, and in another eight Member States the practice became widespread but voluntary on account of banks' concerted action. Core EU countries typically introduced a 3-month moratorium, often only for household loans or only for corporate credit, or a subset of them, whereas in Hungary and other CEE countries, a longer, 9–12-month moratorium was proclaimed. With a view to bank stability, the ECB and several other central banks directed the institutions within their jurisdiction to temporarily suspend dividend payments on account of the coronavirus. The European Commission also adopted an extraordinary temporary policy package amending EU banking prudential rules to facilitate lending to households and companies.

However, several countries might find themselves in difficulty in connection with the fiscal measures aiding crisis management, due to their limited room for fiscal manoeuvre. For example, European Union Member States have limited opportunities for spending, because the deficit requirement stipulates that the government deficit for a given year may not be over 3 per cent of GDP. This is why the European Commission suspended the application of the relevant deficit rules in response to the crisis, to increase the room for fiscal manoeuvre. The Commission also allowed Member States to reallocate for fighting the epidemic the EUR 29 billion from the common budget that has not been spent in the 2014–2020 EU programming period as well as the unspent EUR 8 billion that should have been refunded until June 2020. In addition, the European Stability Mechanism (ESM) also has available lending capacity of EUR 410 billion. Furthermore, the IMF also stands ready to mobilise its lending capacity of USD 1,000 billion.

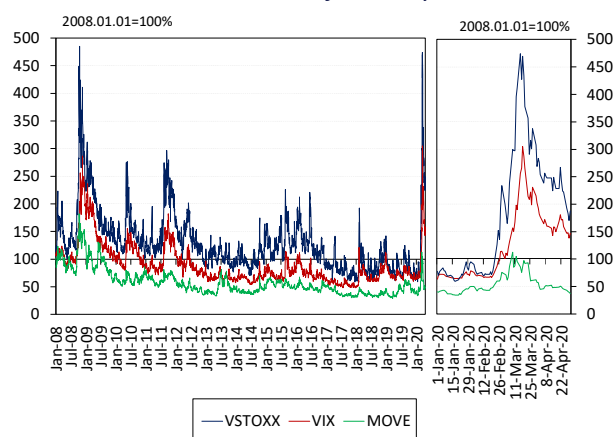
Chart 20: Development of major stock indices



Source: Thomson Reuters Datastream

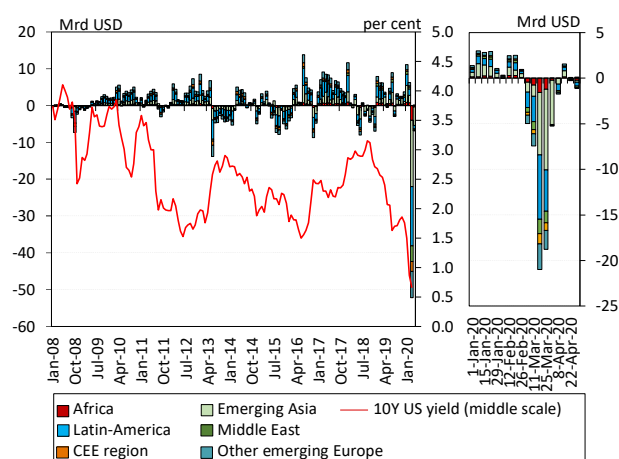
Covid-19 spreads faster than predicted, inducing violent fluctuations on the equity markets. 2019 had ended on an optimistic note on the equity markets, but in early 2020 caution on the market increased due to the tensions between the US and Iran and the outbreak of the coronavirus epidemic in China. Risk aversion intensified considerably from February when the coronavirus spread to Europe (Chart 20), and money market volatility indices also rose (Chart 21). The Russian–Saudi oil conflict, the faster-than-expected spread of the virus and the announced isolation measures triggered a series of negative sentiment and demand shocks on markets. The substantial government and central bank interventions announced at the end of March brought some temporary respite and money market volatility indices dropped, but remain higher than at the beginning of the year. Markets are very sensitive to the announcement of public relief packages as well as the news on the spread of Covid-19 and the incoming data.

Chart 21: Evolution of volatility indices



Note: The value of the VIX (VSTOXX) index is calculated at the Chicago Board of Options Exchange (European Options Exchange) and shows the market's expectation of the development of volatility for the next thirty days. MOVE measures bond market volatility (US Treasury yields). Source: Thomson Reuters Datastream

Chart 22: Evolution of 10-year US yields and emerging market capital flows



Note: The left-hand chart shows monthly capital flows, the right-hand one shows weekly figures. Source: EPFR, Thomson Reuters Datastream

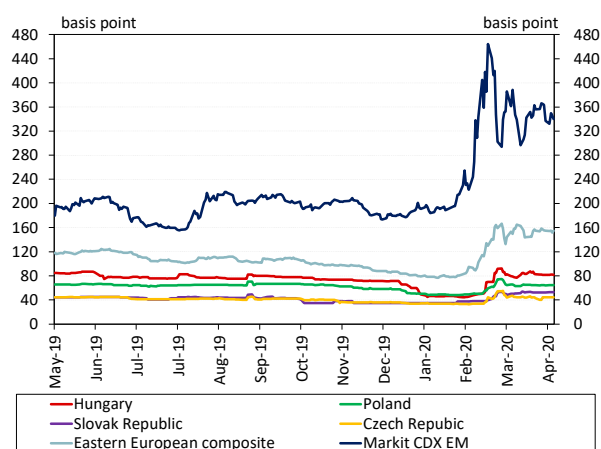
2.2 Hungary and the CEE region: strong fundamentals, high external sensitivity

The change in investor sentiment related to the pandemic had a strong effect on emerging market capital flows. At its emergency meeting on 3 March 2020, the Fed cut interest rates by 50 basis points to mitigate the negative effects of Covid-19, which was assessed by investors as a negative development, since it confirmed the rise in risks and uncertainties caused by the pandemic. After the interest rate cut, yields on 10-year US government securities, considered risk-free safe haven assets, sank to a historic low, at below 1 per cent (Chart 22). At the same time, huge amounts of capital exited the emerging markets, which are generally seen as riskier. The largest withdrawal occurred in Latin America and the Middle East, where – in terms of the average asset holdings in February – the outflows in March exceeded 8.5 and 7.9 per cent, respectively. Emerging European countries experienced slightly lower outflows relative to assets, amounting to roughly 6.6 per cent.

The rise in emerging country risk levels was also reflected in CDS spreads, based on which the Visegrad region proved to be more resilient than other emerging areas. The price of covering emerging country debtor risk skyrocketed, the 5-year Markit CDX Emerging Markets Index soared. In addition, the Eastern European composite premium also increased significantly. The Hungarian 5-year CDS spread grew by 47 basis points in the first three weeks of March, while the Polish was up by 25, the Czech by 23 and the Slovak by 16 basis points (Chart 23), a rate of change unparalleled in recent years. Higher CDS spreads prompted investors looking for safe assets to remove their funds from emerging countries. This also played a role in the depreciation of emerging and CEE currencies in March. The Visegrad countries proved to be more resilient: their CDS spreads adjusted considerably by the end of March, coming close to their 2019 average, and at the same time capital outflows also dropped in these countries.

Due to their economic structure, CEE countries are also exposed to the effects of Covid-19. The slowdown in the euro area and the disruptions in global supply chains hamper economic growth in this export-oriented region. The deterioration in the performance of the German economy, their most important trading partner, may have the most unfavourable effect on their economies. The impact on the CEE region is compounded, as the vehicle industry, which is vulnerable owing to the cross-border, *just-in-time* supply chains, is affected by the drop in demand and has a

Chart 23: 5-year CDS spreads in CEE countries and certain emerging market composite indices



Source: S&P Market Intelligence, Thomson Reuters

Table 3: Affected sectors' value added share in the CEE region and in the EU on average (% , 2017)

	HU	CZ	AT	PL	RO	SI	SK	EU
Manufacturing of computers, electrical and electrical equipment	5.1	4.4	3.6	2.1	1.9	4.9	3.9	n/a
Manufacturing, trade and repair of motor vehicles and other vehicles	9.4	10.8	5.0	5.9	9.5	5.9	10.1	6.2
Transport and warehousing	7.7	6.2	6.9	6.7	7.6	8.6	6.6	6.8
Accommodation and food	2.1	2.2	5.1	1.5	2.4	3.4	1.4	3.7
Film and television production, music studio activities, real estate activities, travel agency and tour operator activities	5.2	4.8	7.7	3.4	1.2	2.2	4.1	5.9
Construction	5.6	6.4	9.1	6.9	6.7	6.4	6.1	7.7
Manufacturing of paper, wood, metal, textile and leather goods and furniture and printing	11.1	15.2	12.2	14.5	11.5	16.5	15.8	9.2
Total	46.1	50.0	49.6	41.0	40.8	47.8	48.1	n/a

Source: Eurostat

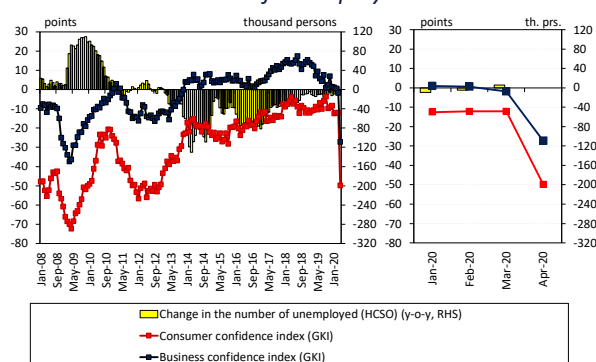
dominant share in the economy (Table 3). In Germany, several car manufacturers announced temporary shutdowns in March, and therefore vehicle production also stopped in Slovakia and Hungary, which are deeply integrated into German manufacturing supply chains. Since the sector employs about 1.2 million people in the region – one third of the total in the EU vehicle industry – a longer shutdown could have profound labour market implications. Although several car manufacturers have announced since then that production will restart, the extent of the economic confidence shock is evident from the fact that in March the Hungarian manufacturing purchasing managers' index sank to an all-time low of 29.1 points, while Poland (42.4) and the Czech Republic (41.3) also recorded figures unprecedented since the crisis.⁷ The value added of the other vulnerable industries exposed to the isolation measures and the drop in aggregate demand, such as tourism and trade, as well as the high proportion of workers employed there, also represents a significant risks to growth and employment. To make matters worse, most workers employed in these segments are less skilled and less easily absorbed by the market in a recession, even if the labour demand of certain segments (e.g. telecommunication) increases temporarily.

For the time being, only some of the effects of the coronavirus are detectable in the available data, but the outlook is negative. The Hungarian statistics for March only partly reflected the impact of the coronavirus. For example, the unemployment rate among 15–64-year-olds (3.8 per cent) showed only a slight uptick (0.2 percentage points) in the first quarter year-on-year. Nevertheless, the moderate deterioration in the ratio may also have been due to methodological reasons,⁸ and in the first quarter of 2020 – for the first time since 2013 – the number of unemployed increased on an annual basis (by 6,000). The impact of the pandemic could also be observed in households' shrinking net financial savings in March. Following a dynamic expansion of over 10 per cent in January and February, non-food retail sales practically stagnated in March. Nonetheless, retail sales grew in that month, primarily owing to food and non-specialised food shops, where the sales volume was up by almost 13 per cent year-on-year, partly owing to the heightened demand related to the

⁷ The relatively small decline in the Czech and Polish figures is attributable to the increasing duration of delivery times, which is normally a sign of strong demand and consequently lifts the index. However, in the present situation this probably reflects disruptions in supplier chains.

⁸ According to the HCSO, the overwhelming majority of those newly losing their jobs increased the number of inactive rather than the unemployed due to the methodology of the Labour Force Survey. This is because those who lost their jobs did not actively seek employment and/or would have been unable to start working within 2 weeks, mainly due to the restrictive measures. As the restrictions are eased or lifted, the inactive unemployed may return to searching for jobs, which could entail a considerable rise in the unemployment rate over the course of the coming months.

Chart 24: GKI economic sentiment indices and the number of unemployed



Note: In the case of unemployment, three-month average data, 15-64 age cohort. In the case of GKI sentiment indices, seasonally adjusted data. Source: HCSO, Thomson Reuters Datastream

lockdown. The turnover of commercial accommodation establishments dropped significantly: overnight stays were down by 65 per cent in March, even with some of the establishments operating in the first half of the month. As a result of the restrictive measures introduced and the disruptions in the supply chains, industrial production also decreased according to preliminary estimates: production volume dropped by 10 per cent year-on-year adjusted for the working-day effect, and there was a major decline in vehicle manufacturing due to the temporary shutdown of production. However, surveys show a further deterioration in expectations: April saw a massive drop in both components of the GKI economic sentiment index (Chart 24), and willingness to employ and the Hungarian economic outlook are both deep in negative territory. The manufacturing purchasing managers' index remained low (at 33.6 points in April), which also suggests a decline. The MNB's survey conducted at the end of March to explore the first-round effects of the pandemic also shows unfavourable future effects: almost half of the responding firms experienced a substantial contraction in sales revenue and a similar share observed liquidity problems. Close to half planned layoffs (especially the companies in food service activities, transportation and manufacturing).⁹

Table 4: Evolution of selected economic indicators in Hungary

	Indicator	2008	2012	2019
Economic performance	GDP growth (per cent)	0.9	-1.4	4.9
	Unemployment rate (15-74 year, per cent)	7.8	11.0	3.3
Government debt and budget	Government debt (in per cent of GDP)	71.8	78.5	66.3
	Foreign currency denominated debt of general government debt (per cent)	37.4	40.2	17.4
	Foreign share of government debt (per cent)	51.4	61.7	33.9
	Budget deficit (in per cent of GDP)	-3.7	-2.4	-2.0
External vulnerability	Current account balance (in per cent of GDP)	-7.1	1.6	-0.8
	Net external debt (in per cent of GDP)	52.6	45.3	7.9
	Gross external debt (in per cent of GDP)	97.1	98.8	53.3

Note: For GDP growth, seasonally and calendar adjusted data. For government debt, in gross, consolidated, nominal terms (Maastricht) debt. Source: Eurostat, HCSO, MNB, Government Debt Management Agency (ÁKK)

Yet Hungary's economic fundamentals are now much stronger than in earlier crises. The coronavirus shock hit the Hungarian economy in a favourable stance. Based on both real economy and financing indicators, the country's vulnerability is lower than at the outbreak of the 2008 financial crisis or the 2012 tensions in the euro area. One of the largest steps ahead in terms of vulnerability was the major reduction in external debt, reflected in both gross and net debt indicators (Table 4). The various central bank and government programmes (forint conversion of foreign currency loans, Self-Financing Programme) were also key in lowering vulnerability. In June 2019, the so-called Government Security Plus (MÁP+) was introduced within the scope of the renewal of the strategy for the government security holdings of the household sector. The MÁP+ strengthens domestic funding and thus limits risks stemming from foreign financing; moreover, it has a favourable effect on the maturity structure of the government debt. Based on recent data of 11 May, the household sector's current government security holdings amount to more than HUF 8.3 billion, out of which 47 per cent is in MÁP+ securities.¹⁰ The Hungarian economy's fast recovery from the coronavirus shock is supported by the announced government and central bank schemes (Box 3).

BOX 3: HUNGARIAN FISCAL AND CENTRAL BANK MEASURES INTRODUCED TO MITIGATE THE ECONOMIC IMPACT OF THE EPIDEMIC

The government and the MNB took several measures to mitigate the negative economic consequences of the coronavirus and restart the economy after the epidemic recedes. The main purpose of the measures is to ease the tensions caused by the pandemic as much as possible, to prevent prolonged, sustained economic damage and to restart the affected industries as fast as possible.

Fiscal measures

The government established new fiscal funds to finance the measures: the Pandemic Defence Fund, the Economy Protection Fund and the Fund for Aid Received from the European Union. The Pandemic Defence Fund is financed from the Country Protection Fund, the special tax on credit institutions and retail chains, the motor vehicle tax from local governments, half of the financing paid to parties and other reallocated funds from the budget, totalling HUF 634 billion (1.3 per cent of GDP). The Fund will pay for the wage increase of skilled healthcare workers and maternity nurses and the one-time wage supplement of healthcare workers in 2020. It is also used to acquire the equipment, machines and devices for fighting the pandemic with a value of several hundred billion forints.

The Economy Protection Fund is financed from reallocated funds in the budget and the revenues of the National Employment Fund, totalling HUF 1,346 billion (2.7 per cent of GDP). The economy protection schemes funded from this can be classified into 5 categories: 1) protection of jobs; 2) protection of key industries; 3) job creation; 4) business financing, and 5) protection of families and pensioners. To protect jobs, under certain conditions the budget covers 70 per cent of the wages of those employed in reduced working hours for 3 months. In addition, companies receive a 40-per cent wage subsidy for those employed in R&D positions (up to HUF 319,000) if they undertake to continue employing the workers. Several simplifications were introduced in administration and the tax code: VAT refunds are paid within 30 days rather than 75 days in the case of ordinary taxpayers and within 20 days rather than 30 days in the case of reliable taxpayers; the deadline for the financial statements and the filing of the corporate tax and the local business tax is extended to 30 September; companies may retain their taxpayer rating obtained last year. Firms may request a reduction in any tax (up to HUF 5 million) if they are in difficulty due to the epidemic and may request payment in instalments for 12 months or a penalty-free 6-month deferral for tax arrears of up to HUF 5 million. The government also established the legal framework for a potential capital injection at Hungarian financial institutions. According to the relevant decree, the government may purchase bonds issued by banks for up to a total of HUF 150 billion. The bonds may only be used for the damage caused by the coronavirus pandemic, and scheme is capped at HUF 50 billion per bank. Detailed description of the regulation can be found in Box 11.

The companies operating in the sectors most affected by the economic impact of Covid-19 receive a tax allowance and development subsidies and have access to favourable loan and capital schemes. In the targeted industries, businesses are exempt from employers' taxes and contributions and receive discounts from the rehabilitation contribution and the small enterprise tax. Workers are exempt from the pension contribution and receive discounts from the health insurance contribution. Rental agreements concluded with firms in these sectors may not be terminated and the rental price may not be raised. The small taxpayers' itemised lump sum tax (KATA) is suspended until July for over 80,000 businesses. HUF 600 billion is planned for the protection of tourism (1.2 per cent of GDP), and the tourism development contribution and the tourist tax are suspended. The limit on the SZÉP Card's preferential tax rates rises to HUF 800,000 in the private sector and HUF 400,000 in public administration, and no social contribution tax needs to be paid on the

⁹ 4,900 firms participated in the MNB's online survey between 26 March and 2 April, 98 per cent of which were SMEs. <https://www.mnb.hu/saitoszoba/saitokozlemenvek/2020-evi-saitokozlemenvek/az-mnb-koronavirus-iarvany-gazdasagi-hatasait-vizsgalo-vallalati-felmeresenek-eredmenvei>

¹⁰ Nevertheless, the retail government security sector has also been affected by the coronavirus. In the middle of March, disbursement significantly diminished and repayments increased. Nevertheless, the net change in the volume of the household asset holdings has only been negative in the third week of March, and since then, net sales mainly stagnated, while from the end of April, they became positive again. However, MÁP+ holdings grew by a net sum of HUF 280 bn between the beginning of March and the middle of May, while net sales have only been negative on 4 days.

benefits on the card until July. To support home construction, the VAT on new homes built in brownfield areas is reduced to 5 per cent. In addition, most taxpayers are exempt from paying the water resource contribution in agriculture.

In terms of job creation, the government seeks to create as many jobs as are eliminated by the virus. Companies receive aid for job protection, job creation and efficiency-boosting investments, if they undertake to preserve the jobs. Moreover, the amount of corporate tax allowance related to investments increases. The training of workers is also supported: students who have not obtained a degree due to the lack of a language exam are exempt from the language exam requirement; a general purpose student loan scheme is developed for those studying in higher education and jobseekers will be eligible for an interest-free adult education student loan. New preferential loan schemes are deployed to finance companies, with new guarantee programmes provided by the state, and existing capital programmes are overhauled and new ones are being launched. The government funds available to non-financial corporations are detailed in Box 5.

To support families and pensioners, evictions, seizures, tax execution procedures as well as KATA tax arrears were suspended until the end of the state of emergency. Eligibility for childcare benefits and family allowances is extended until the end of the state of emergency. The moratorium on payments lasting until the end of the year helps households as well as companies. The 13th-month pension will be reintroduced in four steps from 2021 to support pensioners.

All in all, the government expects that the majority of the fiscal measures will be covered by the established funds, and therefore the anti-epidemic measures in themselves will only increase the deficit to a limited extent. The deficit is nevertheless foreseen to be well above the amount planned in the Budget Act (1 per cent of GDP), because the deceleration in economic growth leads to a substantial drop in tax revenues.

Central bank measures – Liquidity and regulation

The MNB responded to the coronavirus crisis with measures to provide immediate liquidity and ease the situation of several sectors, immediately following the declaration of the state of emergency. The central bank supports the recovery of the economy with a targeted loan programme, the expansion of liquidity, bond purchases and changes to the micro and macroprudential regulatory instruments.

The central bank announced collateralised, general purpose loan products for counterparty banks and public open-end investment funds, available at several maturities and with a fixed rate. The amount allocated for the collateralised loan products is uncapped. The MNB also exempted institutions from meeting the reserve requirement and expanded the list of eligible collateral with large enterprise loans. These decisions increased banks' liquidity reserves by HUF 250 billion and 2,600 billion, respectively. Banks' liquidity position and the impact of the central bank instruments are discussed in Box 9.

The central bank also supports the liquidity of the bond market. At its meeting on 7 April, the Monetary Council decided to launch a government securities purchase programme on the secondary market to establish a stable liquidity situation on the government securities market, and to restart its mortgage bond purchase programme to boost the long-term funds in the banking system. The details of the two programmes were decided by the Monetary Council at its meeting on 28 April: during the government securities purchases, the central bank focuses on securities denominated in HUF and with maturities over 3 years, ensuring, in line with the European Central Bank's practices, that the purchased amount should not exceed 33 per cent of the total stock in any series of securities. The amount allocated for the mortgage bond purchase programme is 50 per cent of the issued stock, and the central bank will make purchases on both the primary and the secondary market. The MNB supports the liquidity of the corporate bond market by amending the conditions of the Bond Funding for Growth Scheme: although the amount allocated for the programme does not increase, the central bank's maximum exposure to a company group rises from HUF 20 billion to 50 billion, while the maturity of eligible securities is extended from 10 years to 20.

The MNB also supports the liquidity of real economy actors. On 16 March, the central bank issued a press release declaring, on its own initiative, a moratorium on payments for corporate loans disbursed under the Funding for Growth Scheme (FGS). For the corporate and household loans outside the FGS, the central bank recommended the suspension of payment obligations, and the government implemented the moratorium shortly thereafter. The moratorium on

payments is detailed in Box 6. To support the financing of *companies*, the MNB announced the FGS Go! scheme with an allocated amount of HUF 1,500 billion. The programme aims to facilitate SMEs' access to financing in the tight economic situation induced by the coronavirus. It supports economic growth with a wider scope than previous FGS schemes. The details are presented in Box 5.

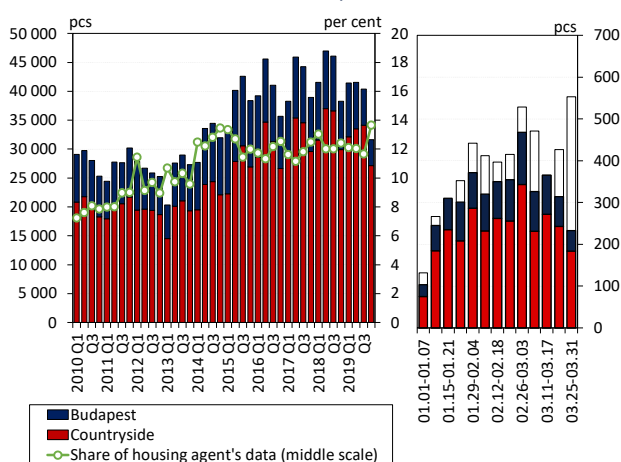
The MNB also seeks to maintain *bank lending* in its capacity of a regulatory body. Several capital requirements for credit institutions have been suspended to allow banks to use their accumulated reserves without curbing their lending activity for regulatory reasons. This topic is discussed in more detail in Chapter 6 of the Report. Besides releasing capital buffers, the MNB called on banks not to pay dividends from their 2019 profits. Thus, the entire profit from last year can be used to increase banks' reserves. The central bank also helps banks manage the current situation by enhancing the monitoring system, postponing supervisory inspections and laying down consumer protection requirements. Acting within its own competence, the central banks also introduced measures to simplify lending to households and expedite processes (for example the exemption from appraisal and notarisatation).

3 Real estate markets: Coronavirus epidemic causes a significant reduction in real estate market activity

The spread of Covid-19 in March dealt a sudden, massive blow to activity on the Hungarian real estate market. The number of housing market transactions in the last week of March amounted to merely 42 per cent of the same period last year, due to the wait-and-see approach of both sellers and buyers. The pandemic hit the new home market in an already declining stage, and several developments still under preparation may be scrapped due to the shrinking demand, resulting in an even greater fall in home construction. Overall, the banking system's risks are limited from the perspective of a real estate market shock: even if house prices were to drop by 30 per cent, the loan-to-value ratio would only rise above 100 per cent in the case of 16 per cent of the mortgages.

On the commercial real estate market, the segments most affected by the economic impact of the pandemic are hotels and retail properties. The hotel segment faced a practically complete shutdown, while developments amounting to 27.5 per cent of the current capacity are being implemented in Budapest in response to the very favourable trends in tourism in recent years, raising the risk of oversupply. Among retail properties, the most affected companies are in the services sector, especially those operating in tourism and food service activities. Moreover, losses on rent revenues also put property owners in a precarious position.

Chart 25: Number of housing market transactions (left-hand chart) and housing agent transactions (right-hand chart)



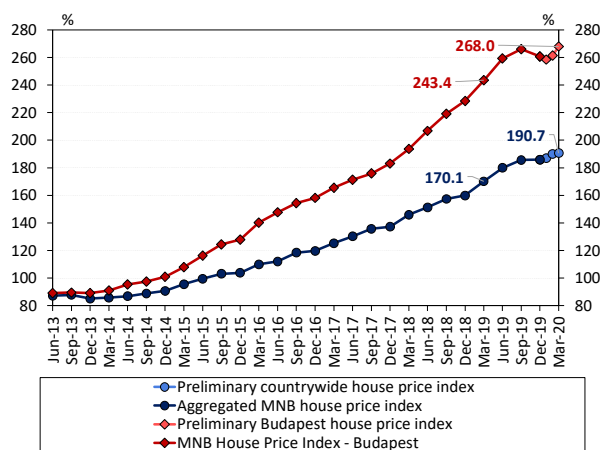
Note: The transparent columns on the right-hand chart show the number of real estate agent transactions country-wide in 2019 compared to 2020 transactions. Source: MNB, housing agent database

3.1 Restrictions imposed due to Covid-19 drastically cut housing market activity

The pandemic has had a negative impact on the Hungarian housing market via different channels. The crisis induced by the spread of Covid-19 has stifled demand even in the short run, primarily because of the lack of willingness for personal contact and thus the postponement of house purchases. Looking to the medium term, the negative income and wealth effect of the epidemic and the resulting contraction in the number of borrowers may also lead to lower demand. The virus may also exert an unfavourable effect on the supply side through temporary disruptions in and disintegration of supply chains, which entails a shortage of imported inputs and difficulty in accessing labour, causing further delays in construction work.

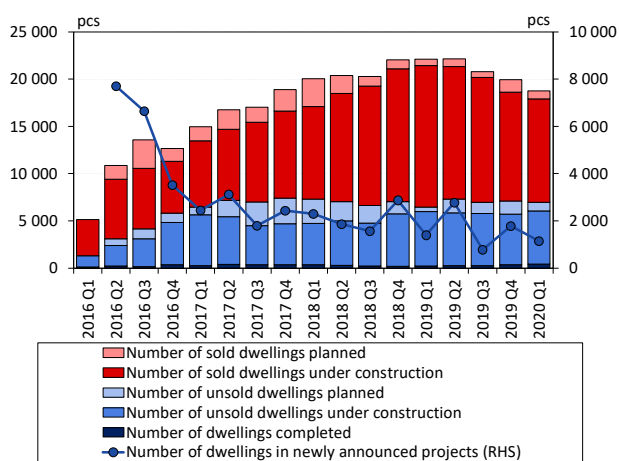
In March, the number of sales transactions diminished by almost a third due to the pandemic. The number of housing market transactions already declined in the second half of 2019, mainly in Budapest, where, partly owing to the MÁP+ dampening investment motivations, the number of transactions contracted by 29 per cent year-on-year. Agents' data show that the number of transactions also decreased in 2020 Q1, falling by 28 per cent in Budapest and 19 per cent across the country year-on-year, largely due to the spread of Covid-19 in March. As the number of infections grew and the lockdown was implemented, housing agents closed fewer and fewer deals (Chart 25). In March, sales transactions were down by 30 per cent at the

Chart 26: MNB house price index for the country and Budapest, and preliminary monthly house price indices (2010 average = 100%)



Source: MNB, housing agent database

Chart 27: Number and ratio of vacant new homes under development in Budapest



Source: ELTINGA - Housing report

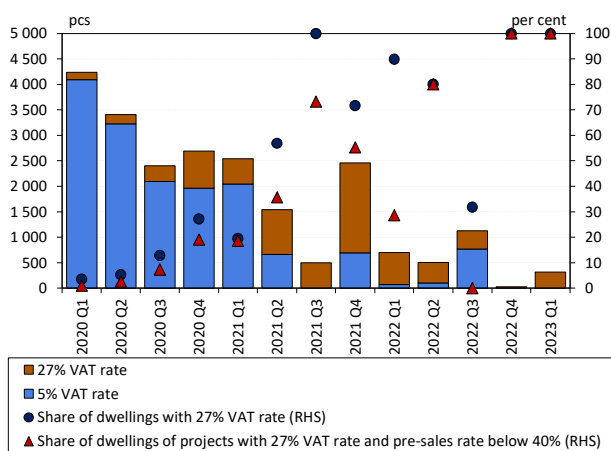
national level and 38 per cent in Budapest compared to last year. The last week of March saw a year-on-year drop of 64 per cent in Budapest and 58 per cent in the country as a whole.

In 2019 Q3, house prices increased in the context of declining price dynamics, but the price appreciation seen for years in Budapest came to a halt at the end of 2019. Hungarian house prices continued to appreciate in 2019 Q3, but the growth rate of house prices declined both quarter-on-quarter and year-on-year. Annual price growth fell to 21.5 per cent in Budapest and 17.9 per cent in the country (Chart 26). In 2019 Q4, house price depreciation of 2 per cent was observed in Budapest in quarter-on-quarter terms, a development unprecedented for many years. By the end of 2019, annual price growth had fallen to 14.1 per cent in Budapest and 16.2 per cent in the country on average. According to agents' data, house prices in the capital continued to slide in January 2020, although there was a slight uptick in February and March.

Home development activity is steadily declining in Budapest. Although the number of new completions reached a record high of 21,100 in 2019 in the current market cycle that started in 2014, home construction is continuously decreasing based on the number of ongoing projects. In the first quarter of 2020, there were 18,300 new homes under development in Budapest, down by 16.3 per cent year-on-year. At the same time, the number of homes in newly started projects reached record lows by the second half of 2019 and early 2020 (Chart 27). Home construction activity was reduced primarily because the period with preferential VAT rate on homes ended in late 2019, which could further increase the already high prices, especially in the capital. In 2020 Q1, 44 per cent of the available new homes with the new 27-per cent VAT rate were repriced, leading to average price appreciation of 16.4 per cent. All in all, the Covid-19 crisis hit the new home market in an already declining state.

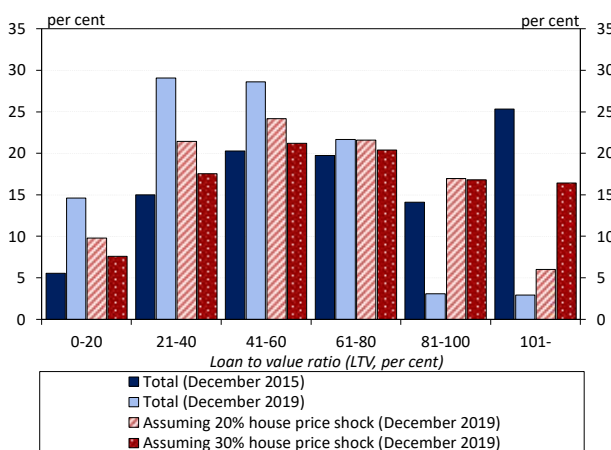
Many new home projects may be cancelled due to the protracted coronavirus epidemic. The emerging crisis exerts a substantial impact on used homes as well the development and market of new homes, thereby lowering demand. According to market intelligence, in the event of a protracted epidemic, the development of the projects with the 27-per cent VAT rate and low pre-sales figures may stop as a result of the higher gross list prices and already weakening demand. This could potentially affect 42 per cent of the new homes in preparation and development, which would entail a massive drop in the already

Chart 28: Distribution of new homes in development in Budapest by the relevant VAT rate and the quarter of planned completion



Source: Based on projects for more than 4 new homes in Budapest. ELTINGA - Housing report

Chart 29: Distribution of outstanding mortgage loans by the current and the shock LTV ratio



Note: Distribution by volume of contracts.

Source: MNB

contracting supply of new homes (Chart 28). The construction of new homes is supported by the fact that according to the announcement of the government on 16 April, a VAT rate of 5 per cent instead of 27 per cent applies to the selling and renting of new homes in brownfield areas.

In the event of a potential 30-per cent contraction in house prices, 16 per cent of mortgages would be over the 100-per cent LTV value. Since 2015, the distribution of credit institutions’ outstanding mortgages by the current loan-to-value (LTV) ratio has improved considerably, partly on account of the marked increase in house prices. While in 2015 almost 40 per cent of outstanding loans had an LTV ratio of over 80 per cent, this proportion had dropped to 6 per cent by the end of 2019. The economic slowdown caused by the Covid-19 crisis foreshadows the possibility of a contraction in prices on the housing market, which could cause losses to the sector through the reduction of the value of bank collateral. Although sellers’ potential wait-and-see approach and the demand-boosting effect of the family support measures work against the fall in prices, rising unemployment and fire sales could dampen house prices. In the event of a hypothetical 20-per cent drop in house prices,¹¹ the share of mortgages with an LTV of over 80 per cent would climb to 23 per cent, and in the case of 30-per cent shrinking it would soar to 33 per cent (Chart 29). If the latter two scenarios were realised, the share from the total stock of the loans over the 100-per cent LTV would be 6 and 16.4 per cent, respectively, while the resulting amount of unsecured principal would total HUF 54 billion and 100 billion, respectively. In other words, the proportion of mortgages with an LTV value of over 100 per cent would be lower than in 2015, even in the event of a 30-per cent house price shock; therefore, based on this the banking system is relatively protected against real estate market shocks.¹²

3.2 Immediate standstill in the hotel segment and certain retail properties¹³

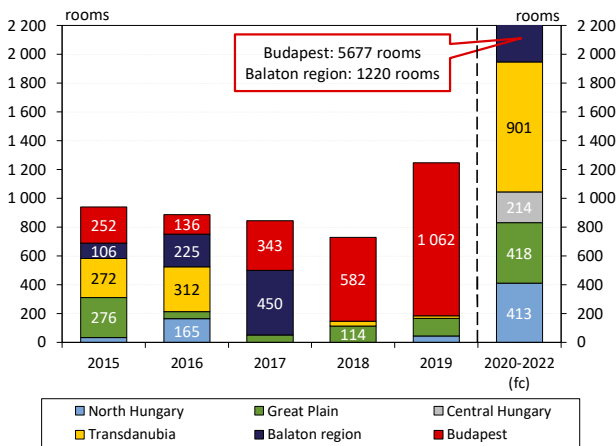
Major hotel developments are under way in the country, especially in Budapest, but the pandemic may disrupt several projects. All market experts seem to agree that the commercial real estate segments most exposed to the

¹¹ After the 2008 financial crisis, average house prices declined by 21 per cent across the country between 2008 and 2013.

¹² The December 2019 Financial Stability Report examined the real estate market exposure of the banking system with a wider scope, but the risks to banks arising from this were deemed to be limited back then as well.

¹³ For more on the developments on the commercial real estate market, see the MNB’s [Commercial Real Estate Market Report](#) published in April.

Chart 30: Number of opened and planned hotel rooms in Hungary

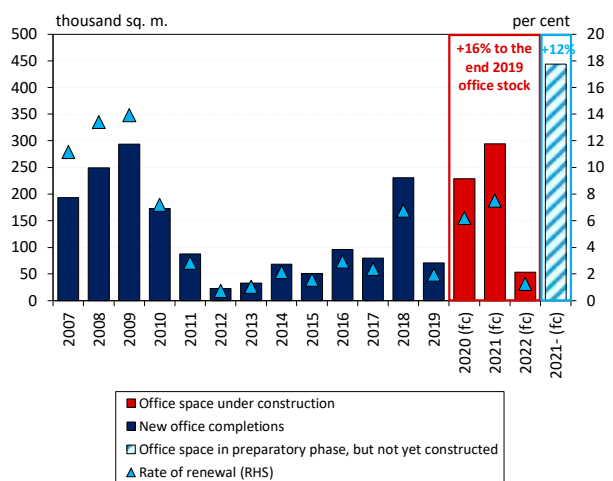


Note: Data for 2020-2022 includes the number of rooms in hotel projects that were in the phase of preparation or under construction at the end of June 2019 and are scheduled to open by the end of 2022. Source: Hungarian Hotel & Restaurant Association

coronavirus crisis are hotels and the retail properties. The hotel market came to a complete standstill practically immediately after the virus spread across Europe. Occupancy rates will probably be minimal in the spring months, and the short-term prospects of the sector will be determined by how long the pandemic lasts. The hotel sector is characterised by exceptional development activity throughout the country, but principally in Budapest, where accommodation capacity was expected to expand by 27.5 per cent based on the ongoing or planned developments at the end of 2019 (Chart 30). This raises the possibility of oversupply and the potential increase in the risk of project loans granted to the sector.

As regards retail properties, many tenants are experiencing payment difficulties even in the short term. Among the tenants of retail properties, the most affected are those in services sectors (tourism, restaurants), where almost all tenants indicated that they were unable to pay rent as per the agreement or to pay anything at all, even in the short run. Limited opening times generate major revenue losses for the shops as well as property owners, compounded by the fact that even in opening hours customer numbers are down by 40–80 per cent. Turnover is further reduced by the continued expansion of online stores. The risks emerging from the segment are mitigated as no oversupply is expected due to the lack of retail property developments.

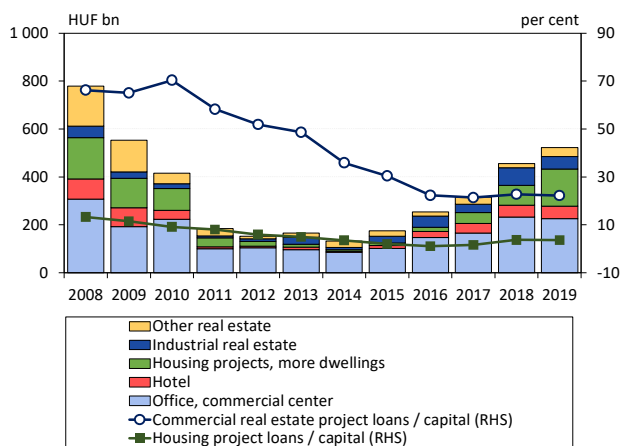
Chart 31: Development activity in the Budapest office market



Note: The total floor space of office projects that are in the pipeline is equivalent to 12 per cent of the end-2019 modern office stock, and some of these developments may be completed in 2021 the earliest, depending on when construction work actually starts. Based on end of 2019 data. Source: Budapest Research Forum, Cushman & Wakefield

Large-scale office completions in the years ahead could be marketed in a transformed economic environment and in the context of changed tenant needs. In the present situation, tourism, food service activities and offices serving companies in aviation are in the most difficult position, but some other larger firms have also requested discounts from rent. The vacancy rate of modern rented offices in Budapest had sunk to a historic low of 5.6 per cent by the end of 2019, while the segment experienced buoyant project financing activity in 2019, too. The office market was characterised by short supply in 2019, and office space amounting to 16 per cent of the total stock is currently under development (Chart 31). Pre-lease contracts have been concluded for over 50 per cent of the developments, which reduces the risk of oversupply, but large-scale developments will still be completed when rental demand is lower due to the epidemic and office needs may have potentially changed. The home office, which has become widespread due to the pandemic, may become the norm, entailing a sustained decline in demand for office space. Nonetheless, a huge amount of office space (31 per cent of the end-2019 office stock) is in the pipeline over

Chart 32: Volume of new commercial real estate project loans and the ratio of the outstanding loans to own funds



Note: Until 2010, new loans also include those disbursed to non-residents. Source: MNB

the medium term. Construction work has not started yet, so developers can still review these projects under the present circumstances.

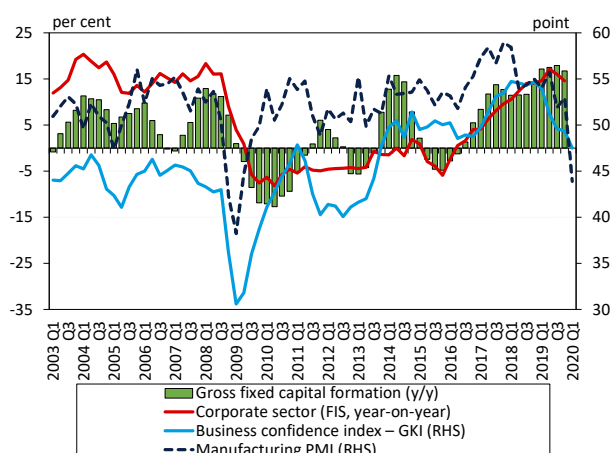
In the context of a substantial increase in commercial real estate project financing, the banking system’s exposure to the real estate market is low. In 2019, 43 per cent of new commercial real estate project loans were disbursed for the development or acquisition of offices or commercial centres, while the outstanding lending to this segment amounted to HUF 550 billion in 2019. Besides the active lending to the office and retail segments, the loans extended for the development and acquisition of hotels and gated communities also increased significantly. In the hotel segment, new disbursement grew by 56 per cent and 27 per cent in 2017 and 2018, respectively, and another 4-per cent expansion was observed in 2019. Furthermore, the volume of new gated community project loans jumped by 87 per cent in 2019. Yet the banking system’s commercial real estate project financing exposure is still at a historic low relative to own funds, despite the uptick in new loans (Chart 32). Risks are also mitigated by the fact that most of the exposure is denominated in forint or euro, and the Swiss franc portfolios typical at the outbreak of the previous crisis have almost completely disappeared.

4 Trends in lending: Approximately one third of outstanding loans are connected to vulnerable debtors

Outstanding loans of non-financial corporations from credit institutions and financial enterprises exhibited exceptional growth in a regional and international comparison, expanding by almost 15 per cent in 2019. However, the negative economic effects of the pandemic that appeared in early 2020 suddenly posed challenges to the corporate sector, which has a major impact on trends in lending as well. In addition to the slump in credit demand due to the deteriorating economic outlook, credit supply may also be significantly constrained as banks' risk perception changes. In the context of the temporary liquidity and supply chain issues, bankruptcy risk may considerably rise in certain subsectors. The outstanding borrowing of the subsectors worst hit by the crisis could amount to HUF 700–800 billion. The moratorium on loan payments eases companies' liquidity problems considerably, entailing up to an estimated HUF 2,500–3,000 billion in excess liquidity for the sector. However, the liabilities not affected by the moratorium on payments (especially supplier credit) may still cause financing disruptions in the corporate sector. These liabilities could lead to liquidations and bankruptcy proceedings in the sector, threatening to entail the sustained disintegration of supply chains and thus the emergence of adverse real economic effects. The epidemic's economic consequences could substantially lower corporate credit growth, but taking the strong economic stimulus measures into account, the paralysis of lending activity is projected to be merely temporary. This is supported by the fact that in contrast to the 2008 global economic crisis, banks' now have much better lending capacity.

In 2019, households' outstanding borrowing expanded dynamically, expanding by 14 per cent year-on-year, which is exceptional even by international standards. At the same time, over-indebtedness is not typical in the sector as a whole, either in a European comparison or historically, which reduces macroeconomic vulnerability. Among outstanding loans, no considerably overstretched income situation can be seen at the level of contracts either, and the share of mortgages repricing within the year dropped to below 50 per cent by the end of the year. Therefore, debt servicing is mainly at risk from the mass layoffs caused by the coronavirus epidemic rather than the minor changes in the interest rate environment or incomes. From the perspective of the composition of the household loan portfolio, the most vulnerable sectors are currently tourism, catering, manufacturing and construction, where one-third of debtors work. As a result of the negative effect of the reduction in credit demand and the positive effect of the moratorium on payments, household credit may expand in 2020 as well, although at much slower pace than projected by the developments prior to the pandemic.

Chart 33: Annual growth rate of corporate lending and certain economic indicators

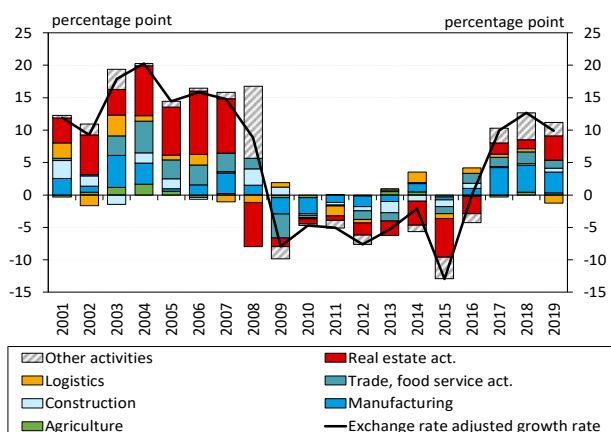


Note: Transaction-based credit growth. The monthly figures of the GKI business confidence index and the quarterly, smoothed values of the Purchasing Managers' Index for the manufacturing sector are shown. Source: MNB, GKI, IHS Markit

4.1 Lending activity may swiftly recover after the setback in corporate lending

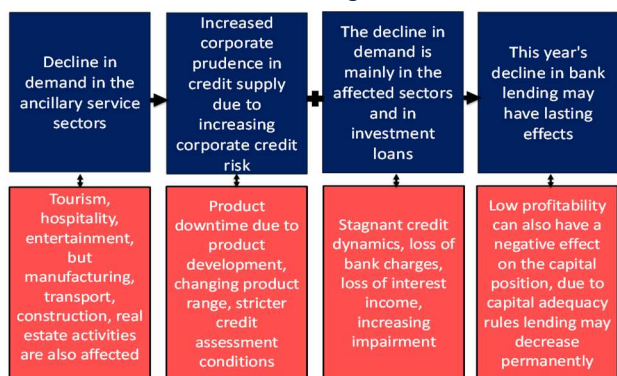
The spread of the coronavirus may significantly lower the almost 15-per cent corporate credit growth seen in 2019. Outstanding loans of non-financial corporations from credit institutions and financial enterprises increased by a total of HUF 1,236 billion in 2019 on a transactional basis, amounting to HUF 9,843 billion. The 14.6-per cent year-on-year credit growth (Chart 33) was exceptional by regional and international standards, supported by the 14.7-per cent expansion in SME loans as well as several very large loans extended to large enterprises. In line with the exceptional growth in corporate investments, roughly half of the increase was attributable to the expansion in long-term loans with original maturities of over 5 years. However, the negative economic effects of the pandemic in Hungary in March 2020 suddenly posed challenges to the corporate

Chart 34: Contribution of sectors to the annual growth rate of the credit institutions sector's corporate loans outstanding



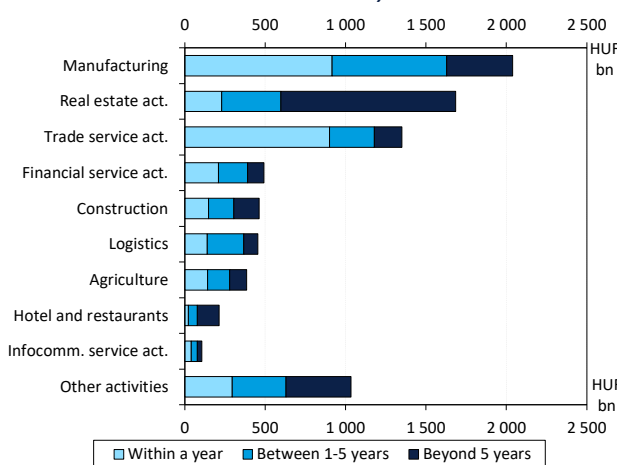
Note: Exchange rate adjusted values. Based on data from the credit institutions sector. It contains the effect of disbursements and repayments as well as that of write-offs and reclassifications. Other sectors: based on the residual principle; it contains, for example, the financial and insurance sector. Source: MNB

Chart 35: Potential direct effect of Covid-19 on corporate lending



Source: MNB

Chart 36: Sector distribution of corporate credit by residual maturity



Note: Performing, non-delinquent corporate loans of the credit institution sector. Source: MNB

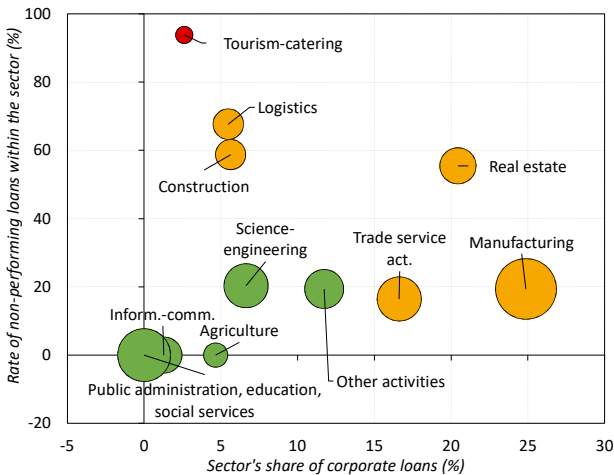
sector, which was also reflected in the nosediving confidence and sentiment indices.

Lending increased the most in the manufacturing and real estate sectors in 2019. The expansion in the loans to the sectors that dominate the real economy added almost 8 percentage points to the annual growth of corporate credit in 2019, while the growth contribution of other sectors declined from the previous year (Chart 34). The largest contribution to the broad-based growth was made by the real estate sector with 3.7 percentage points, although this still falls short of the pre-crisis levels of 6–10 percentage points. In contrast to the period before the global financial crisis that began in 2008, no signs of overheating can be identified in the current credit cycle. Credit growth is occurring in a healthier structure, in a more balanced manner from the perspective of sectoral and denominational structure, and there is ample room in aggregate corporate indebtedness for the build-up of credit.

The responses to Covid-19 could considerably undermine credit demand in certain sectors. The faltering of international trade and value chains led to weakening demand as well as storage problems and production shutdowns in several sectors. Coupled with the uncertain market environment, these set back or delayed corporate investments and the related credit demand. Besides the slump in credit demand, credit supply may also be significantly constrained as banks' risk perception changes, and the uncertainty related to credit risk costs may result in the tightening of non-price terms. The decline in the willingness to finance could have repercussions in the whole economy, further deepening the problem and creating a negative feedback loop. If the growing credit losses have a major impact not only on bank profitability but also on the capital position, a potential capital shortfall at certain institutions could reduce banks' credit supply for years (Chart 35).

Corporate credit continues to be dominated by lending to manufacturing, real estate transactions and the trade sectors. By the end of 2019, the outstanding loans from credit institutions had increased to over HUF 8,300 billion, out of which HUF 8,219 billion were in non-overdue liabilities. Almost 40 per cent of the latter, HUF 3,042 billion, matures within a year and comprises around HUF 1,400 billion in overdrafts. Short-term funding is used mostly by the trade and repairs sector, however, almost half of the outstanding borrowing of manufacturing matures within a year (Chart 36). Due to banks' growing risk sensitivity, refinancing risk could increase significantly. However, the recourse

Chart 37: Role of vulnerable sectors in corporate debt

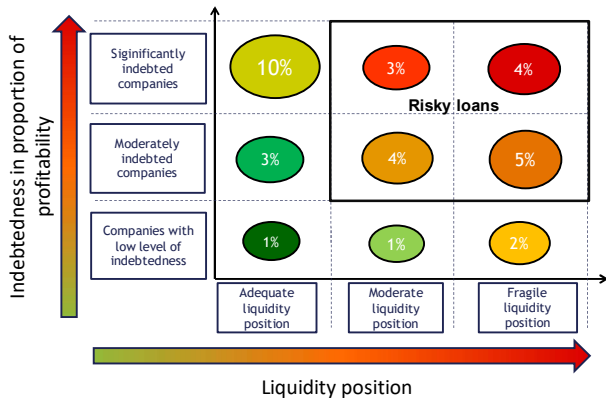


Note: Based on 2019 data for the credit institution sector. Vulnerable loans are loans taken out by debtors with vulnerable activities (Hungarian NACE Rev. 2). A detailed description of the vulnerability calculations is provided in the methodological annex at the end of the report. Bubble size corresponds to the value added of the whole sector. Source: MNB, NTCA

to the standing corporate bank overdraft facilities did not rise significantly until the end of April.

The outstanding borrowing of the subsectors worst hit by the crisis amounts to HUF 700–800 billion. The most direct and devastating economic effects of the crisis were exerted on the accommodation and food service activities sector, but the loans of the banking system to this industry do not pose a systemic stability risk. The sector’s outstanding loans from the credit institution sector amounted to HUF 200 billion at the end of 2019, comprising less than 3 per cent of total corporate credit (Chart 37). Loans financing hotel developments and acquisitions amounted to HUF 147 billion at the end of the year. However, firms in the transportation and storage sector as well as travel agencies and fleet providers and the companies specialising in leisure activities may also sustain severe losses during the crisis. In retail trade, the reduction in the demand for motor vehicles and motorcycles as well as other durable goods may also entail revenue losses for numerous businesses. Hungarian credit institutions have credit claims totalling HUF 700–800 billion against these companies, amounting to 9 per cent of total corporate credit. Although merely indirectly, the car manufacturing and its supplier network, construction and the real estate transactions sectors are also affected, with a combined HUF 1,500 billion in potentially vulnerable loans. All in all, based on the classification of activities, 9 per cent of the total corporate exposure is directly vulnerable, and 23 per cent is indirectly vulnerable.

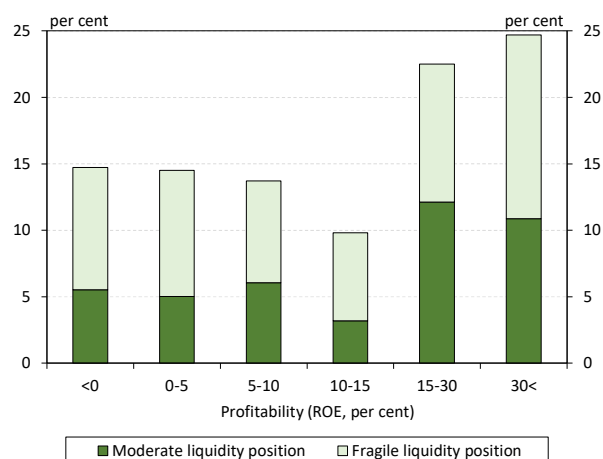
Chart 38: Loans of vulnerable companies by liquidity position and indebtedness as a share of total corporate credit



Note: Indebtedness: low if debt/EBITDA indicator is below 1, moderate if the indicator is between 1 and 4 and significant is the value of the indicator exceeds 4 or is negative. Liquidity position: adequate if the personnel expenses/cash indicator is below 0.5, moderate if the indicator is between 0.5 and 2 and significant if the value of the indicator exceeds 2. Based on tax declaration data from 2018 and loan data from end of 2019. Source: MNB, NTCA

With respect to the vulnerable stock, an estimated one-sixth of the total corporate exposure is highly risky. From a credit risk perspective, outstanding loans should also be segmented by sectors and other criteria (liquidity position, indebtedness and profitability). Half of the vulnerable corporate credit exposure is related to firms where low indebtedness or adequate liquidity reserves could cushion the adverse effects of the coronavirus crisis. The other half of the loans on the other hand are on the balance sheet of companies that are classified as moderately or highly indebted and also have an inadequate liquidity position (Chart 38). This highly risky exposure amounts to 16 per cent of total corporate credit. The analysis of the profitability of companies shows that approximately 30 per cent of highly risky loans are linked to companies with weak profitability (with a return on equity of under 5 per cent) (Chart 39). Among the firms that operate in vulnerable industries, those that had weak profitability in 2018 (meaning even during a time of broad economic prosperity), coupled with moderate liquidity reserves and indebtedness, held almost 5 per cent of total corporate credit at the end of 2019. Of course, the

Chart 39: Profitability distribution of highly risky exposures



Note: Companies with a personnel expenses/cash indicator larger than 2 are considered to be in fragile liquidity position, while companies with a value between 0.5 and 2 are considered to be in a moderate liquidity position. Based on tax declaration data from 2018 and loan data from end of 2019. Source: MNB, NTCA

slowdown throughout the whole economy also means difficulties, via indirect and second-round effects, for businesses operating in the sectors that were not highlighted as vulnerable here.¹⁴ Therefore, besides the detailed analysis of vulnerable sectors, it was also examined how the deterioration of the affected industries' situation impacts the sales revenue of other companies that were initially spared by the crisis, and how much the loans of these firms account for in total corporate credit (Box 4).

BOX 4: ANALYSIS OF THE SPREAD OF SHOCKS ACROSS SECTORS WITH NETWORK METHODS BASED ON VAT CONNECTIONS

The suppliers of the worst hit (vulnerable) sectors may also feel the pinch of the pandemic. Due to the customer–supplier relationships among companies, certain economic actors have close ties to each other. If any of the nodes in the network comprising the businesses sustains a sudden shock, its impact can soon spill over to its business partners. For example, the drop in the orders of businesses operating in accommodation and food service activities, as the sector worst hit by the coronavirus epidemic, could affect the sales revenue of companies in sectors that would not necessarily be considered highly vulnerable from the perspective of the pandemic, for example: the agriculture and the food industries.

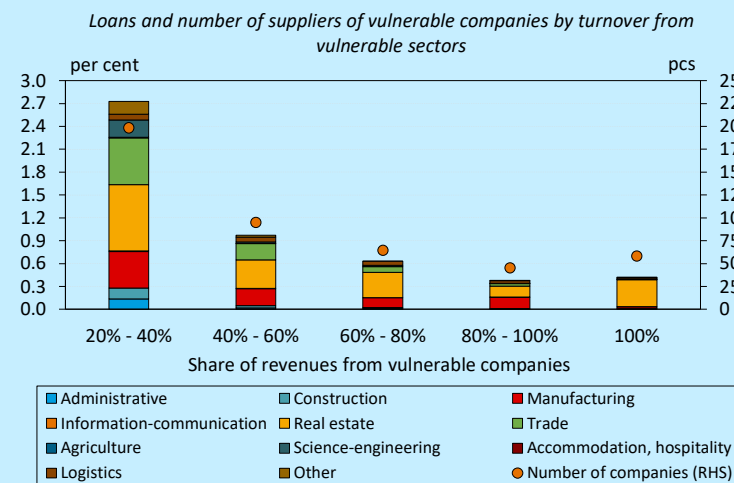
Data from the National Tax and Customs Administration were used to assess the risks arising from customer–supplier relationships, company-level supplier relationship. Since all VAT subjects are required to report in their VAT returns their trading partners related to which taxes of at least HUF 1 million were generated, the supplier network of Hungarian companies could be reconstructed fairly accurately.

The data cover half of the purchases, and in terms of the value of purchases, longer-term economic ties dominate. The data are for 2015–2017, but only about 50 per cent of the total purchases from this period can be observed, as no information is available on imports and relationships generating less than HUF 1 million in taxes. Taxpayers in VAT groups are observed collectively, and ownership ties are also taken into account based on OPTEN data. The raw network changes considerably during the years under review as there are many one-off, ad-hoc transactions. Since these are usually irrelevant in the spread of shocks, they were filtered out by defining long-term supplier relationships. Ties are considered stable supplier relationships if the parties conduct at least two transactions and if at least one quarter passed between their first and last transactions. In 2017, only 54 per cent of the ties are long-term in nature, but these

¹⁴ 35 per cent of the companies less affected by the pandemic are in an inadequate liquidity position and are moderately or highly indebted, while 15 per cent are in an especially weak liquidity position, compounded by heavy indebtedness. These businesses may find themselves in a difficult situation due to their overstretched financial position and thus lower resilience to shocks, even if the restrictions and the drop in demand induced by the coronavirus epidemic mostly affected others.

cover 93 per cent of the total turnover observed in the network. Therefore, the network under review contains approximately 80,000–100,000 companies and 200,000–250,000 supplier ties each year.

The analysis examined the strength of the relationships relative to the sales revenue of the company concerned. The exposures were aggregated by 1, 2, 3, ..., n steps in the supplier network, thus the indicator derived in this manner shows what percentage of each firm's sales revenue is linked directly or indirectly to the shocked sectors. Next, businesses were associated with the 2017 data from the Central Credit Information System, to assess the amount of the loans outstanding threatened by the shocked sectors.

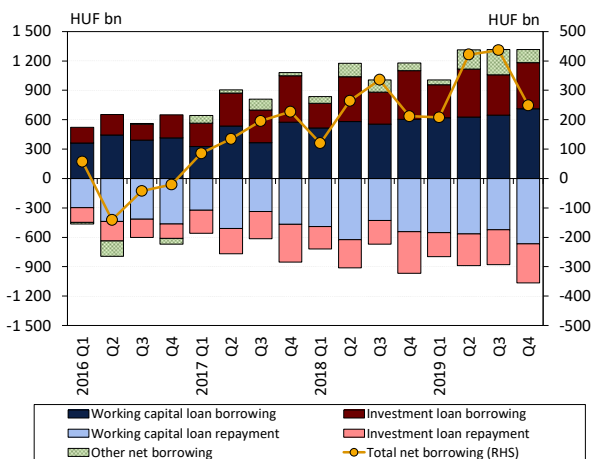


Note: In proportion to the total corporate loan portfolio. The ratios were calculated on the basis of contractual loan amounts. Source: NTCA, CCIS, OPTEN, MNB

The results show that there are at least 4,600 companies that are not inherently vulnerable, but at least 20 per cent of their sales revenue comes from vulnerable firms. Approximately 5 per cent of all loans (credit institutions and financial enterprises combined) are linked to these businesses, estimated based on the loans' value upon the conclusion of the contract. In this population, there are almost 1,700 companies that are highly exposed to vulnerable sectors (with at least 60 per cent of their sales revenue coming from there). The loans of these companies accounted for around 1.4 per cent of total outstanding borrowing according to 2017 data.

Since our database does not contain the relationships in which the VAT amount amassed during the period under review is below HUF 1 million, and we also have no information about import orders and we focused only on steady supplier relationships in our analysis, it should be underlined that our calculations should be regarded as lower bound estimates.

Chart 40: Quarterly borrowing and repayment of the corporate sector



Source: MNB

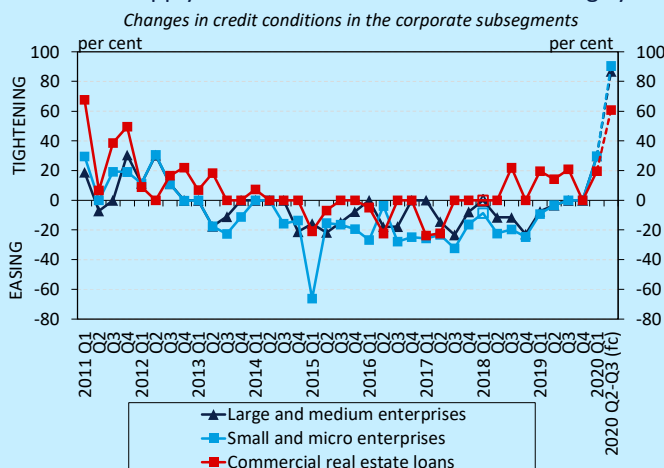
The moratorium provides a major support to companies.

Loan amounts have increased steadily in the SME and large enterprise sectors recent years and the volume of repayments also expanded in line with the growth in outstanding loans. In 2019, the credit institution sector disbursed working capital and investment loans amounting to over HUF 4,300 billion, offset by over HUF 3,600 billion in repayments (Chart 40). Moreover, as a result of the net balance of disbursements and repayments, the amount of other loans outstanding, comprising bank overdrafts and revolving credit, expanded by over HUF 600 billion. To prevent sustained and deepening economic problems induced by temporary liquidity problems, the government declared a moratorium on payments until the end of 2020. This is estimated to generate excess liquidity of up to HUF 2,500–3,000 billion for the corporate sector, but the debtors in the sectors that do not face liquidity problems (roughly 30–50 per cent based on our preliminary survey) will probably take the opportunity to continue repayments. When it comes to meeting their financing requirements, vulnerable companies may be assisted by the government and central

bank programmes announced as a result of the coronavirus (Box 5).

BOX 5: MEASURES SUPPORTING CORPORATE LENDING ANNOUNCED ON ACCOUNT OF THE PANDEMIC

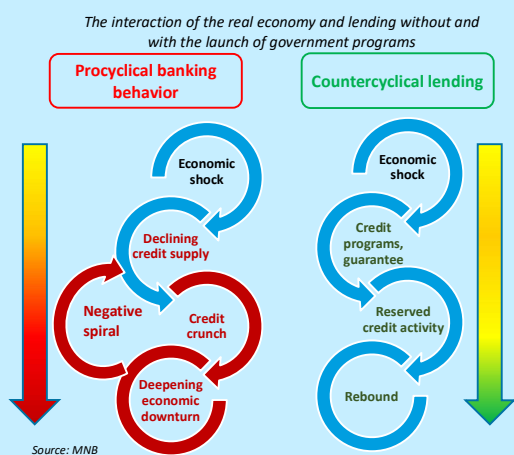
In the extraordinary situation that emerged due to Covid-19, it is vital to ensure that Hungarian businesses have access to adequate funding and to prevent excessive disruptions in lending. The impact of the pandemic first affected real economy processes, but the deteriorating economic outlook and the growing losses also have a major impact on the credit supply of financial institutions. The banking system operates on a market basis and is thus by nature procyclical: in times of growth its activity and consequently its profitability increase, while in a crisis its credit losses rise and it curbs its credit supply.



Note: Net percentage balance of respondents tightening/easing credit conditions weighted by market share. Source: MNB, based on 'banks' responses.

Banks typically tighten their lending terms in response to the broad shock to the economy, in order to mitigate credit losses. Heightened risk costs basically entail a change in price terms, while greater uncertainty leads to a tightening in non-price terms. According to the MNB's Lending Survey, around 30 per cent of the banks weighted by market share have already tightened corporate lending terms in 2020, and 87 per cent, almost every actor, plan further tightening in the second and third quarter. Based on the responses of industry executives, the tightening covers both price and non-price terms. The latter include stricter rules on monitoring requirements, the minimum required creditworthiness and collateral requirements.

In the context of falling credit demand, a pronounced contraction in credit supply could deepen the real economy downturn, and may trigger a negative, circular feedback loop between the real economy and the financial system. In the event of such a large economic shock, it is crucial that the government help mitigate the tensions in financing by utilising its available instruments to maintain companies' primary channel for acquiring funds, i.e. lending.



central bank announced a moratorium on payments and a flexible restructuring option (including the option of extending the maturity period) under the Funding for Growth Scheme (FGS) to help distressed debtors, then decided to launch a new scheme, the FGS Go!, in line with the changed needs. In addition, it also eased certain conditions of the Bond Funding for Growth Scheme (BGS).¹⁵ At the same time, the MFB and EXIM provide preferential financing to SMEs and large enterprises, and the Széchenyi Card Programme has also been revised. Furthermore, consistent with the central bank's recommendation, the government declared a general moratorium on payments from 19 March, which could significantly improve companies' liquidity position this year.

¹⁵ In the Bond Funding for Growth Scheme, the maximum exposure to a company group rises from HUF 20 billion to 50 billion, while the maximum maturity is extended from 10 years to 20.

The new FGS Go! scheme created in response to the evolving needs has been available since 20 April 2020 with an allocated volume of HUF 1,500 billion, HUF 500 billion of which was reallocated from the HUF 1,000 billion foreseen for the FGS fix scheme, which will be terminated at the end of May. As regards its most important parameters (level of interest rate, method of implementation), the FGS Go! is identical to the abrogated FGS fix. Investment loans (including leasing schemes) can still be obtained, but the maximum maturity of the loans granted under the programme was set at 20 years to ensure the financing of longer investments that generate returns slower. To protect jobs and production capacities and ensure the liquidity of companies, the scheme once again offers an opportunity to provide working capital loans for a wide range of purposes (financing inventories, trade receivables, personnel costs), with maturities of up to three years. In addition, outstanding, non-preferential loans may also be refinanced under the new scheme to reduce the debt-servicing burden. The maximum loan amount per SME was raised to HUF 20 billion to preserve the stability of larger players. The MNB sterilises the surplus funds arising from the FGS Go! disbursements with the preferential deposit facility, paying a 4-per cent interest on it on a temporary basis, until the end of June 2021, thereby encouraging the maintenance of lending activity and stimulating the competition among banks. By the beginning of May, the utilisation of the FGS fix had risen to over HUF 500 billion, of which about HUF 400 billion helped the narrowly defined corporate sector, while more than HUF 100 billion helped sole proprietorships to obtain favorable financing at a fixed interest rate. The FGS Go! has already appeared in the offer of the majority of credit institutions, so a significant amount of contracts is also expected to be concluded in the coming weeks under the new scheme.

Main features of the FGS Go!, the new Széchenyi Card Programs and the MFB loan programs

	FGS Go!	New Széchenyi Card Programs	MFB Crisis Loan	MFB Competitiveness Loan Programme	SME Technology Loan Programme
Loan size	1 million - 20 bn	1 million - 1bn	1-150 million	1-10 bn	1-150 million
Loan targets	working capital, investment (including leasing), loan redemption	working capital, investment, overdraft	working capital, investment, investment substitute	working capital, investment, acquisition, loan redemption, liquidity financing	acquisitions of assets, starting a business
Duration	working capital: max. 3 year investment: max. 20 year	working capital: 2-3 year investment: 6 / 10 year	working capital: max. 3 year investment: max. 10 year	working capital: max. 5 year other: max. 15 year	2-7 year
Interest	max. 2.5%	0.1-0.5%	max. 2.5%	preferential fixed or variable	0%
Source of funding	FGS	FGS	FGS	MFB	EU
Size of own resources	determined by the disbursing credit institution	investment: min. 10%	investment: min. 10%	min. 0% or 25%	min. 10%
State surety and fee	determined by the disbursing credit institution	determined by the disbursing credit institution	Up to 80% (0.1 per cent per annum)	Up to 80% (0.1 per cent per annum)	determined by the disbursing credit institution
Contract period	from 2020.04.20. (no end date)	from 2020.05.15. (no end date)	from 2020.04.30. until 2021.06.30.	from 2020.04.30. until 2023.03.31.	until frame is exhausted
Eligible for borrowing	micro, small and medium enterprises	micro, small and medium enterprises	micro, small and medium enterprises	small, medium and large companies	micro, small and medium enterprises

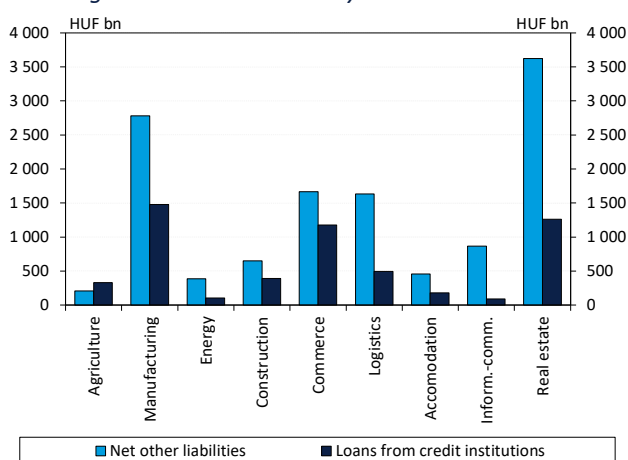
Note: In addition to the 0.1-0.5% interest rates of the Széchenyi Card Program, additional fees may be charged. Source: MNB

Companies' adjustment is facilitated through the Hungarian Development Bank by loans, guarantees and capital programmes covering all company sizes with an allocated amount of almost HUF 1,500 billion. The MFB Crisis Loan, with an allocated amount of HUF 180 billion, and the SME Technology Loan Programme, with an allocated amount of HUF 98 billion, can provide help to micro, small and medium-sized enterprises, while the MFB Competitiveness Loan Programme, with an allocated amount of HUF 150 billion, offers assistance to medium-sized and large enterprises. Under the **MFB Crisis Loan Programme**, companies may spend the loans of HUF 1–150 million, disbursed at 2.5 per cent interest, on investments as well as working capital and liquidity financing. Under the **SME Technology Loan Programme**, HUF 98 billion of European Union funds can be allocated for purchasing equipment and launching new companies, with zero per cent interest for the customer, and under the **Competitiveness Loan Programme**, the loans of HUF 1–10 billion provided with a state-backed demand guarantee can be used for investment and working capital financing, refinancing,

acquisitions and liquidity financing. Moreover, the MFB Group launched guarantee schemes with a volume of HUF 550 billion, under which firms can apply the 90 per cent guarantees for overdraft facilities as well as working capital and investment loans, and the Group's existing budgetary guarantee facility also increased by HUF 130 billion. The capital programme with an allocated amount of HUF 371 billion provides companies struggling due to the crisis an opportunity for raising capital. In addition, EXIM is introducing new loans, guarantees and insurance products, to assist firms – whether micro or large enterprises – that are active in exports or are in difficulty due to the pandemic and have at least one economic indicator that has fallen by over 20 per cent.

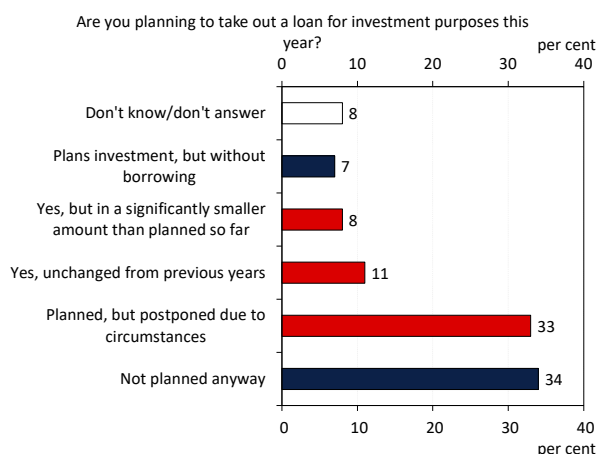
The present economic situation called for the transformation of the Széchenyi Card Programme (SZKP), widely used among companies, to rapidly and flexibly tackle the liquidity issues experienced by firms. The new programme, better aligned with the evolving circumstances, aims to help SMEs in obtaining funds for their short- and long-term needs at favourable conditions. The programme offers an overdraft facility, and liquidity, job protection and investment loans.

Chart 41: Companies' net liabilities and loans outstanding to credit institutions by sectoral breakdown



Note: Based on companies' 2017 accounting balance sheets.
Source: MNB

Chart 42: Investment borrowing plans based on a questionnaire-based survey



Note: The questionnaire was completed by 3,563 respondents.
Source: MNB

The liabilities not affected by the moratorium on payments could cause financing disruptions in the corporate sector.

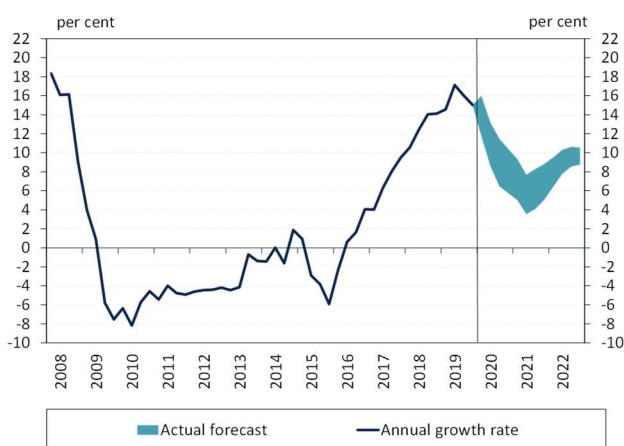
In the extraordinary situation that emerged due to Covid-19, it is vital to ensure that Hungarian businesses have access to adequate funding and to prevent the emergence of financing problems. The moratorium on payments serves as a temporary solution for debt servicing related to outstanding domestic bank loans, but insolvency risk may still be present in relation to liabilities not covered by the moratorium. Such liabilities include foreign loans, supplier credit, other chain debts within the corporate sector, inter-company loans and commercial loans. Any attempt at recovering these liabilities could lead to liquidations and bankruptcy proceedings in the sector, threatening the sustained disintegration of supply chains and thus the emergence of a circular, adverse real economy impact. According to accounting balance sheets, net non-credit institution liabilities could amount to up to double the amount of credit institution receivables (Chart 41). Failure to honour these other liabilities could lead to bankruptcy proceedings, which may have a negative impact on credit institution loans as well.

Almost two-thirds of the planned loan-financed investments in 2020 could be deferred due to the pandemic.

The MNB conducted a survey between 26 March and 2 April 2020 to assess the economic impact of Covid-19 on the corporate sector before the official statistics are received.¹⁶ Around 40 per cent of respondents expect to see the sales revenue of their company shrink to less than half, while 44 per cent believe that it will take at least six months for revenues to return to the levels before the state of emergency. In the volatile economic situation, around two-thirds of the loan-financed investments planned for this

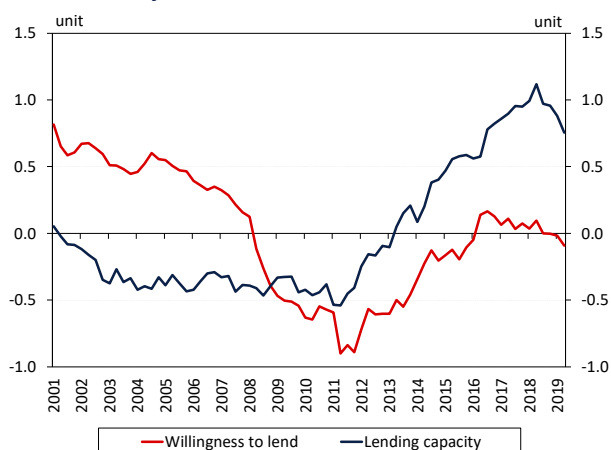
¹⁶ The survey was completed by around 4,900 businesses, 1,243 of which were sole proprietors and 3,656 were partnerships. With respect to the nature and regional distribution of activities, the proportions of the respondents are similar to the country-wide sample, although in terms of size, microenterprises were slightly underrepresented in the survey.

Chart 43: Projection for the growth rate of total corporate debt



Note: Transaction-based, year-on-year data. Source: MNB

Chart 44: Development of the willingness and ability to lend, two factors in the Financial Conditions Index



Note: The specific value at each point in time is the divergence from the historical average measured in the standard deviation of the factors. Source: MNB

year may be deferred due to the epidemic (Chart 42), and in several industries more than two-thirds of firms have temporarily suspended operations. According to the survey, half of the respondents have already experienced liquidity issues due to the economic shutdown. The role of short-term loans extended by credit institutions, in particular the subsidised schemes, may become more significant in addressing the liquidity shortage. Of the respondents, 40 per cent plan to take out loans in the first half of 2020 to temporarily (typically for 3–6 months) finance wages and avoid the need to reduce the number of employees.

The coronavirus could substantially curb corporate credit growth. Lending activity may quickly be reduced considerably on account of the global coronavirus epidemic, and according to our estimate the outstanding corporate credit growth seen in recent years may drop to a level around 6 per cent in the second half of the year (Chart 43). Demand for long-term investment loans is expected decline this year, while demand for short-term loans providing financing may rise. Based on the interviews with banking industry executives, new lending by the subsectors most affected by the crisis could freeze after 2020 Q1, but the share of those taking advantage of the moratorium may be the highest in this segment. The interviews showed that while new lending will grind to a halt, at least a third, but perhaps even half, of the companies will continue debt servicing, which points towards the amortisation of outstanding borrowing. Assuming that the economic shock is temporary, double-digit credit growth could gradually return to corporate lending after 2021.

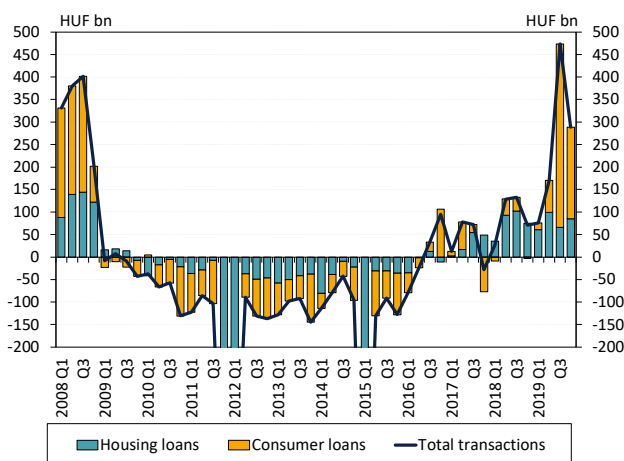
The recovery in lending could be supported by the fact that the banking system's lending capacity is much stronger than at the outbreak of the 2008 financial crisis. Numerous indicators and hence huge amounts of information are available regarding the health, environment and performance of the financial intermediary system. In order to condense the information relevant to the financial system and to describe the underlying processes, the MNB applies factor models,¹⁷ which allow it to present key information extracted from time series in a few variables, i.e. factors. The correlations among the factors and the original variables show that banks' lending capacity (which captures banks' capital and liquidity position) is much more robust than during the 2008 global economic crisis (Chart 44). In contrast to the involuntary deleveraging induced by the

¹⁷ Hosszú, Zs. (2016): The impact of credit supply shocks and a new FCI based on a FAVAR approach, MNB Working Papers 2016/1, Magyar Nemzeti Bank.

overheated lending that preceded the previous crisis, the present situation offers ample room for manoeuvre for banks to boost their lending activity after the state of emergency is lifted.

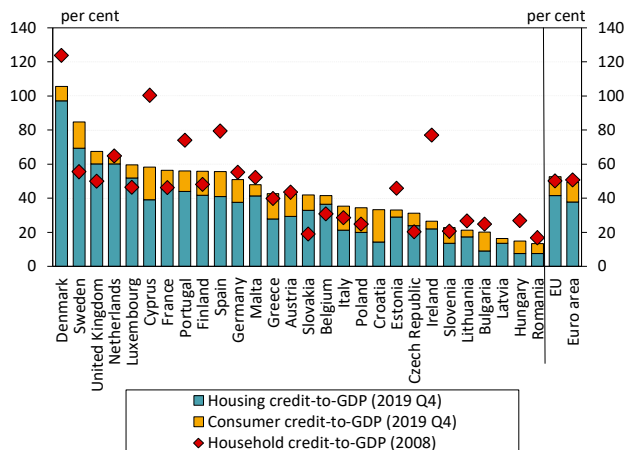
4.2 The structure of the household credit portfolio is appropriate, and the main risks are posed by layoffs

Chart 45: Household loan transactions of the financial intermediary system



Source: MNB

Chart 46: Credit-to-GDP ratio in an international comparison



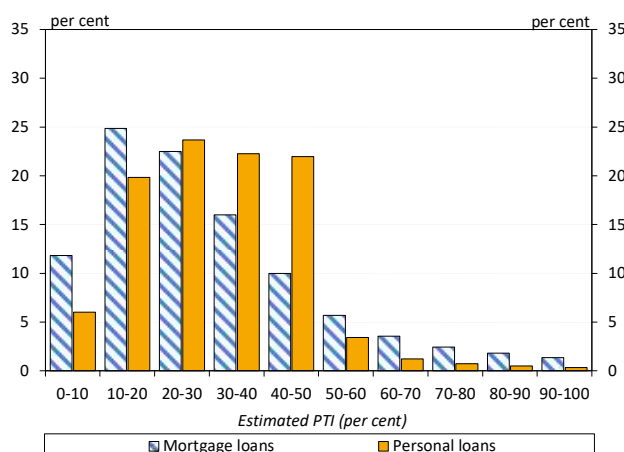
Source: MNB, ECB

Although lending to households has expanded rapidly, indebtedness remained low. Households' loans outstanding vis-a-vis the whole financial intermediary system rose by 14 per cent in 2019, accounting for an increase of over HUF 1,000 billion in the stock (credit transactions) (Chart 45). New loan disbursements amounted to HUF 2,400 billion in the credit institution sector, a historical high in nominal terms, although it still fell short of the level in 2008. The disbursement of HUF 1,000 billion in housing loans represents a 7-per cent increase in new contracts, and personal loans exhibited a 24-per cent rise year-on-year. The trends in lending were strongly influenced by the borrowing of HUF 470 billion related to the prenatal baby support launched in mid-2019. Despite the dynamic expansion, indebtedness is at historical lows (Chart 46), due to a significant overall adjustment in the credit-to-GDP since the 2008 financial crisis.

Household indebtedness is low even in an international comparison. The credit-to-GDP ratio is low compared to the European Union Member States, the Central and Eastern European region and the Visegrad countries as well: indebtedness is only lower in Romania than in Hungary (Chart 46). In a breakdown by products, this lower value can be primarily seen in housing loans. Based on the Debt Service Ratio, indebtedness is not outstanding even relative to disposable income. 30–40 per cent of Hungarian households currently have loans, which is consistent with the European average, and thus the lower indebtedness reflects the relatively lower loan contrast sizes. The credit gap, i.e. the divergence of the actual credit-to-GDP from its trend, remains negative, in other words household lending is not overheated based on this indicator either. Overall, low indebtedness reduces the macroeconomic vulnerability coming from households' loans outstanding.

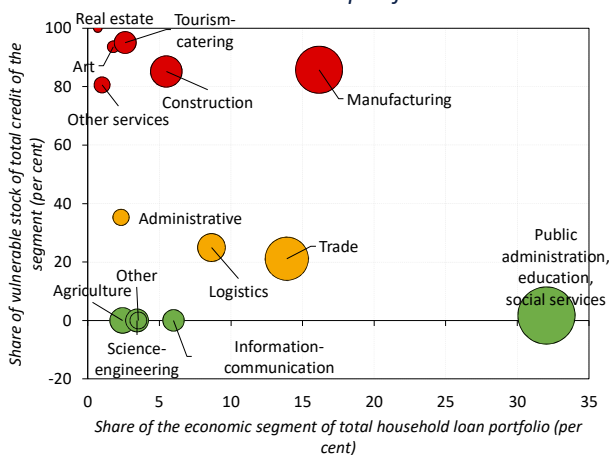
Prior to the appearance of Covid-19, an overstretched income position was identified only in a minor portion of loans outstanding. In the case of a large share of households' outstanding loans, the instalment related to the debtors' income does not exceed 30 per cent. Almost

Chart 47: Distribution of mortgages and personal loans outstanding vis-a-vis credit institutions by estimated PTI



Note: Distribution based on the number of contracts. Contractual PTI for loans granted after 1 Jan 2018. For loans disbursed in or before 2017, estimated PTI based on 2017 wage data. For loans disbursed in 2017 or before, the effect of other debts was also taken into account in estimating the PTI. The chart shows only loans before maturity. Source: Central Administration of National Pension Insurance, MNB

Chart 48: Role of vulnerable economic segments in household loan portfolio



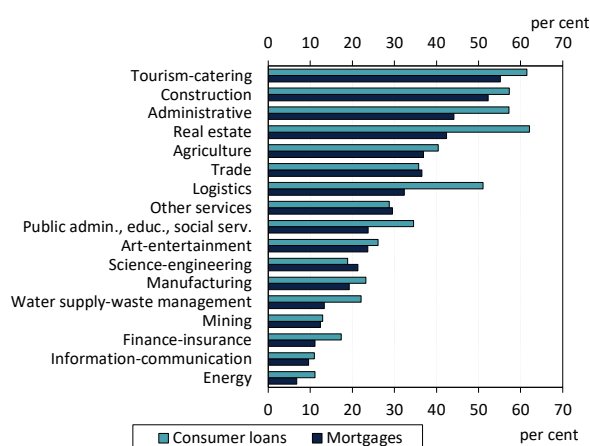
Note: Vulnerable loans are the loans taken out by debtors with vulnerable professions. Bubble size corresponds to number of workers in the sectors. 'Other activities' comprise the mining, energy, water supply and waste management as well as the financial and insurance activities sectors. No vulnerable professions were identified in any of them. Source: Central Administration of National Pension Insurance, MNB

70 per cent of outstanding mortgages are below this level, just like 50 per cent of personal loans (Chart 47). Our estimate shows that only a slight tension can be seen in the case of most household loans, and not only in the case of loans disbursed in 2015 and later, after the debt cap rules came into force. Overall, income levels are sound relative to the debt service, even in the case of the loans disbursed earlier. Thus, debtors are able to withstand minor negative income shocks or the effect of a moderate increase in instalments with respect to a large proportion of the outstanding borrowing. However, around 28 per cent of personal loan contracts have a payment-to-income ratio of over 40 per cent. Even a small change in the circumstances can cause tension in the financial position of these debtors.

One-third of the loans are held by debtors vulnerable to the pandemic. Several domestic economic sectors ended up in a vulnerable position due to Covid-19 and the measures curbing its spread: solvency became almost instantly uncertain for those employed in certain positions in tourism, catering, trade, transportation, manufacturing, vehicle manufacturing, construction, arts and sports, due to a drop in or total loss of income. Our analysis focused on professions (166 out of the 485 listed in the Hungarian Standard Classification of Occupations of the Hungarian Central Statistical Office) that are already vulnerable to the coronavirus epidemic. Vulnerable loans are the loans taken out by debtors who work in vulnerable professions based on our classification.¹⁸ According to wage and credit data from 2017, in terms of the number of loans, 33 per cent of the loans are held by debtors who work in one of the professions most affected by the containment measures. Based on the loans outstanding, 30 per cent of mortgage loans and 34 per cent of unsecured consumer loans are in the vulnerable group (Chart 48). The share of loans held by those employed in directly affected professions is 8 per cent in both the mortgage and the consumer segment, while the proportion of the loans of indirectly vulnerable debtors in the two segments is 22 and 26 per cent, respectively. Low earners are already overrepresented among mortgage debtors in vulnerable professions: the share of below-median earners is 30 per cent, while the same figure for those employed in non-vulnerable professions is 26 per cent.

¹⁸ The classification involved grouping professions into non-vulnerable, indirectly vulnerable or directly vulnerable categories. Then the sector (based on Hungarian NACE Rev. 2) where workers with the specific profession are most commonly employed was associated to them. Thus, all sectors could comprise both vulnerable and non-vulnerable professions. In sectoral calculations, the outstanding borrowing of those classified into the given sector and working in (directly or indirectly) vulnerable professions was compared to the total outstanding borrowing of those in professions classified into the sector. A detailed description of the vulnerability calculations can be found in the methodological annex at the end of the report.

Chart 49: Share of credit stock of below-median income debtors by sectors



Note: Consumer loans include personal loans, vehicle loans and hire purchases. Source: Central Administration of National Pension Insurance, MNB

Manufacturing, tourism and catering, and construction are among the most vulnerable sectors. The vulnerability of the different industries varies based on the composition of the household loan portfolio. The share of vulnerable loans (i.e. the loans of those in vulnerable professions) is over 80 per cent in tourism and catering, manufacturing, construction, real estate transactions, arts and entertainment and other services, so these sectors are the most vulnerable overall (Chart 48). Based on the share of the loans of the debtors with lower (below-median) income, tourism, construction, administrative services can be considered riskier, along with real estate transactions and transportation in the case of unsecured loans (Chart 49). However, the sectors' significance from an economic and financial stability point of view varies: while the share of tourism is relatively low in employment and credit stock, the proportion of manufacturing is high, with 16 per cent of outstanding borrowing and 18 per cent of workers related to this sector. The share of vulnerable stocks is lower in the transportation and trade sectors, but due to the large volume of outstanding loans, the labour market situation of those employed there could be key in determining the portfolio's quality after the moratorium expires.

Table 5: Descriptive quantiles of household loans outstanding

	Percentile		
	25.	50.	75.
Housing loans (credit institutions)			
Outstanding debt	1.7 HUF M	3.9 HUF M	7.4 HUF M
Maturity	6 years	10 years	16 years
Interest rate	3.5%	4.5%	6.0%
Home equity loans (credit institutions)			
Outstanding debt	1.3 HUF M	2.6 HUF M	4.8 HUF M
Maturity	5 years	8 years	11 years
Interest rate	3.1%	4.4%	6.2%
Personal loans (credit institutions)			
Outstanding debt	0.4 HUF M	0.8 HUF M	1.6 HUF M
Maturity	2 years	4 years	6 years
Interest rate	11.6%	16.1%	19.9%
Personal loans (financial corporations)			
Outstanding debt	0.1 HUF M	0.2 HUF M	0.4 HUF M
Maturity	1 years	2 years	2 years
Interest rate	22.3%	22.3%	22.3%

Source: MNB

The moratorium on payments protects debtors, but the maturity could be extended more in the case of personal loans with high interest rates that were taken out from financial corporations. The moratorium on payments decreed until the end of the year aims to stabilise the situation of debtors to avoid defaults and ensure the liquidity of debtors. The maturity period is automatically extended for debtors who take advantage of the moratorium, with the instalments remaining unchanged after 2020. In the case of loans with high interest rates, the maturity of these debtors may be extended more relative to the original maturity after the expiration of the moratorium on payments announced by the government (Box 6). The stock of personal loan contracts concluded by financial corporations may be mainly affected by that, in the case of which 22 per cent is the typical interest rate (Table 5). Although financial corporations conclude contracts with smaller contract sizes and shorter maturities than credit institutions on average, their customers are more exposed to income risks: while credit institutions hardly lend to the bottom income quintile, about one-quarter of financial corporations' customers come from this segment.

BOX 6: MEASURES INTRODUCED RELATED TO HOUSEHOLD LENDING IN RESPONSE TO THE EPIDEMIC

In response to the spread of Covid-19, the government acted in line with the proposal by the central bank and announced measures to ease the situation of debtors. The provisions of the government decree published on 18 March

had a major impact on loans outstanding and newly disbursed loans as well. The two most important elements of the policy package were the moratorium on payments on already disbursed loans and the temporary APR cap on new unsecured consumer loans.

Pursuant to the decree, repayment instalments were suspended until the end of the year for all loan contracts in effect on the day of the announcement. The unpaid interests are not forgone, and customers need to settle them in equal instalments over the remainder of the maturity period. According to the requirements in the detailed decree, the instalment to be paid may not rise after the end of the moratorium, and therefore customers' residual maturity will slightly increase. The suspended interest payments do not bear interest during the moratorium or after that, which allows debtors to tackle any liquidity difficulties by restructuring their debt with preferential conditions.

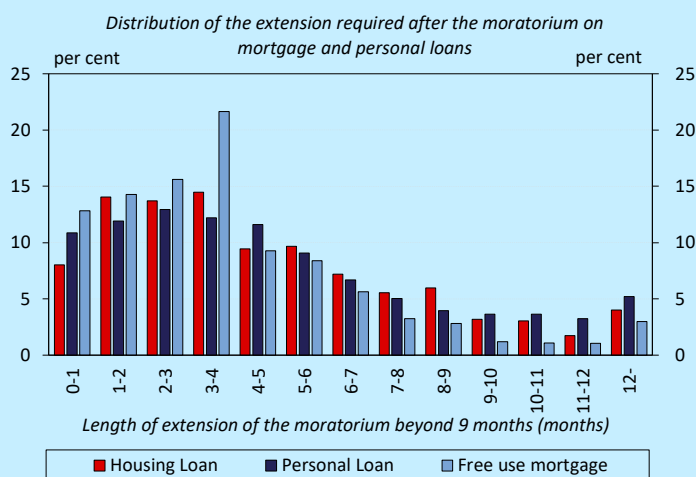
For most contracts, the maturity of the household loans potentially participating in the moratorium (60 per cent of housing loans and personal loans and 70 per cent of home equity loans) is extended by 14 months relative to the original maturity.

Out of this, 9 months are attributable to the suspension of repayments due to the moratorium, while 5 months are explained by the repayment of the accumulated interest payments. The necessary extension of the maturity period depends primarily on the interest rate of the loan and the residual maturity before the moratorium. It should be noted that although at present value (taking into account the interest rate of the loan) customers realise profits with the moratorium in all cases, the

tangible benefits of this cannot be realised by most consumers in the case of loans with high borrowing costs (typically personal loans), due to the lack of low-risk investment products with similar interest rates. For them, continued debt servicing may be a rational decision, if possible. Based on the interviews conducted in April with banks during the Lending Survey, 30–50 per cent of customers could decide to continue debt servicing.

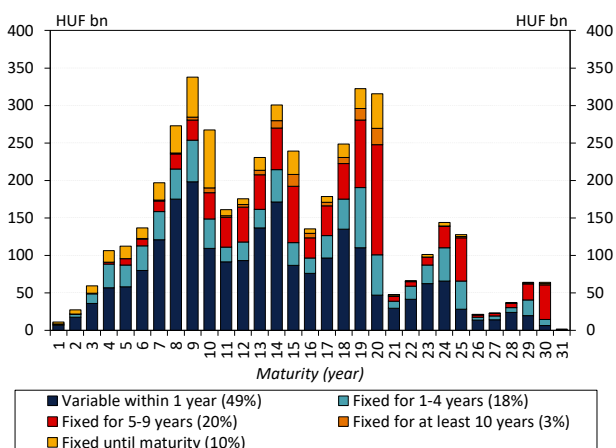
The government introduced an APR cap on unsecured consumer loans to ease temporary liquidity strains on households. The cap applies to newly disbursed loans and will be scrapped at the end of 2020. Since the APR cap only pertains to the first few months of the contract, its introduction could exert different crowding-out effects on the various unsecured consumer loan products: the effects may be greater in the case of the products with a short maturity and high interest rate, and lower in the case of longer-term loans with lower interest. However, since banks' credit conditions are tightening, overall there are several debtors who are not creditworthy anymore even though they would have obtained loans before the pandemic, so these debtors were crowded out from the market irrespective of the APR cap. Banks' interviews suggest that many credit institutions have come up with a product that fulfils the legal provisions.

Acting within its own competence, the central bank also introduced measures to simplify lending to households and expedite processes. The executive circular related to the requirements on the assessment of the down-payment necessary for household mortgages was amended, and the central bank issued an executive circular on certifying the submission of the request for the registration of a mortgage to minimise personal administration, expedite the evaluation of credit claims and ensure business continuity.



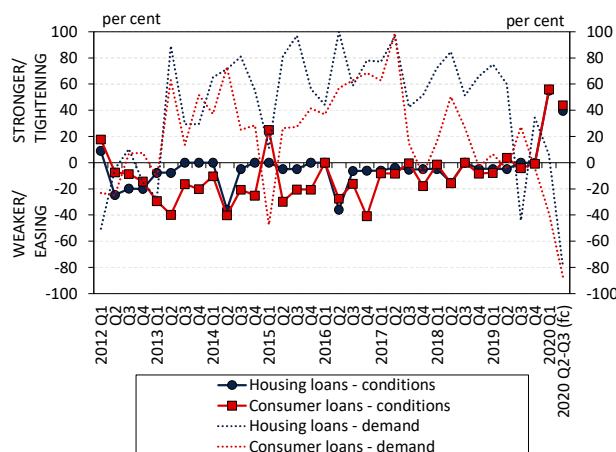
Less than 50 per cent of outstanding mortgages are exposed to the sudden shifts in reference rates over the short term. New housing loans are disbursed with low interest rate risk: one-quarter are fixed until maturity, half are fixed for 10 years and another quarter have a 5-year interest rate fixation period. This was significantly influenced by

Chart 50: Volume of mortgage loans by maturity and interest rate fixation



Note: Distribution based on volumes. Source: MNB

Chart 51: Changes in credit conditions and credit demand in the household segment



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

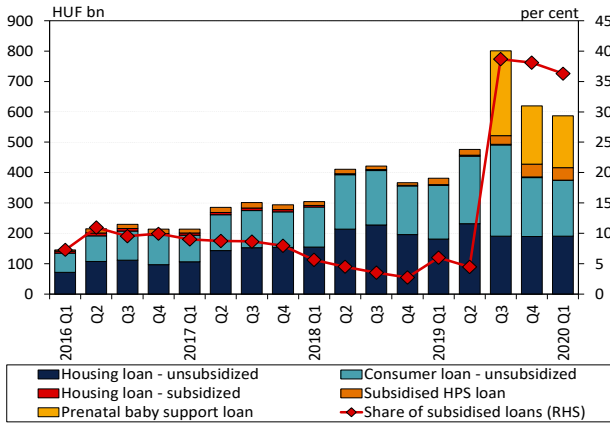
the payment-to-income ratio regulation differentiated by the interest rate period and the spread of the Certified Consumer-friendly Housing Loans (the latter accounts for two-thirds of the potentially certifiable newly disbursed housing loans in terms of volume). Merely 10 per cent of outstanding mortgages are fixed until maturity, but the share of the loans that are repricing within the year had decreased to 49 per cent by the end of 2019 (Chart 50). In case of large-amount loans with shorter maturities, the interest rate risk run by the debtors opting for the moratorium on payments is more likely to be realised due to the extension of the maturity period.

Banks indicate a decline in demand and tightening credit conditions. As a result of the fight against Covid-19, banks are seeing a drop in credit demand and report a simultaneous tightening in credit conditions. Net 55 per cent of the banks participating in the Lending Survey have tightened conditions on housing loans in 2020 Q1, by modifying the scoring system. Most of them cited the declining risk tolerance and the change in customers' creditworthiness as the reasons behind tightening. Looking ahead, in the next six months, 40 per cent of banks plan further tightening in housing loans, justified by the deterioration of economic prospects. A similar proportion of banks have tightened the standards of consumer loans, reflected in spreads and the scoring system. Net 44 per cent of the institutions have indicated the introduction of further tightening. Banks saw no decline in the demand for housing loans during the quarter, but net 80 per cent of them expect diminishing demand in the next six months. Expectations are similar regarding the demand for consumer loans, but some drop in demand has already been detected in this product category during the quarter (Chart 51).

State-backed lending programmes may support household lending. Households' credit demand is dominated by borrowing related to the prenatal baby support and the Home Purchase Subsidy Scheme for Families. The volume of the loan contracts related to the prenatal baby support available since 1 July 2019 amounted to HUF 642 billion by the end of 2020 Q1, with 1,500 new contracts concluded each week on average. In the case of the prenatal baby support loans, demand is expected to decline only slightly due to the favourable credit conditions of the scheme, the state guarantee and the applicants to the scheme.¹⁹ This is also proved by the latest preliminary data: an additional HUF 37

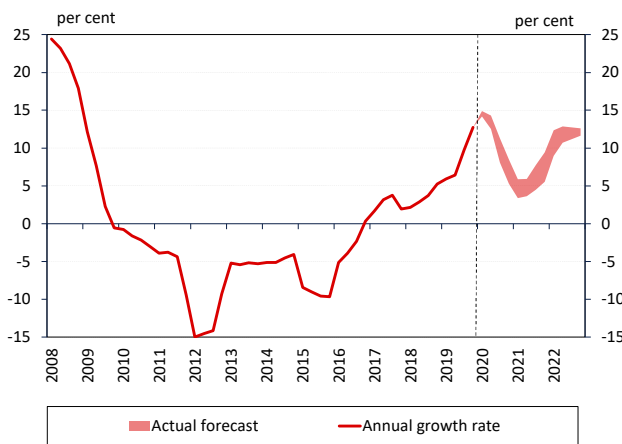
¹⁹ Prenatal baby support loans are usually taken out by high earners with good credit rating, who are probably less affected by the negative impacts of the epidemic. For details, see the MNB's Trends in lending, March 2020: <https://www.mnb.hu/letoltes/hitelezesi-folyamatok-2020-marcius-en.pdf>

Chart 52: Role of subsidised loans in household lending



Source: MNB

Chart 53: Household lending forecast



Note: Transaction-based annual growth rate for the whole financial system. 2019 Q3 data adjusted for transactions of lombard loans. Source: MNB

billion volume of contracts was concluded in April, and the average number of contracts per week decreased to 900, but increased again in the first week of May, to an average of 1,200 per week. There is also strong demand for the Home Purchase Subsidy Scheme for Families: one-fifth of the housing loan contracts concluded in 2019, and 23 per cent of the disbursements in 2020 Q1 were related to the HPS. All in all, state-subsidised programmes accounted for close to 40 per cent of total household lending in the second half of 2019 (Chart 52). However, in the case of these support programmes, the disruptions in administration due to the restrictive measures could pose a risk. This can be mitigated by digitalisation and the option of online application, and several institutions have taken steps towards this.

Household loans outstanding could increase by 5–8 per cent in 2020. Following the accelerating growth in recent years, household loans outstanding vis-à-vis the financial intermediary system may increase at a slowing pace this year. The labour market developments that emerged in connection with fighting the epidemic set back demand for mortgages and consumer loans, but the deteriorating debt-servicing capacity is offset by the moratorium on payments declared until the end of the year. Thus as a result of transactions, the growth rate could drop to 5–8 per cent by the end of 2020 (Chart 53). Assuming that the negative economic consequences of Covid-19 are temporary, the annual credit growth could gradually increase from 2021 as the demand for consumer and investment loans postponed this year appears.

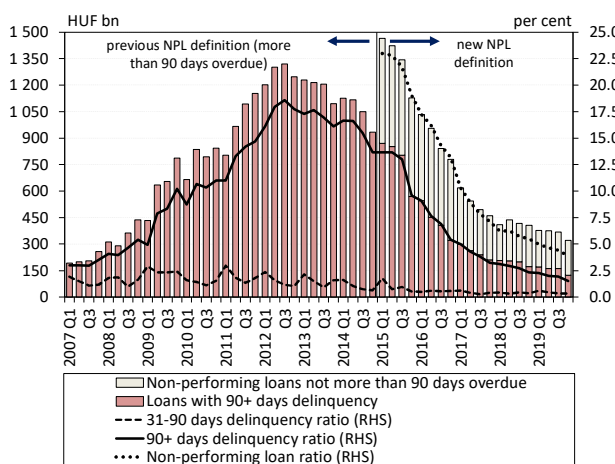
5 Portfolio quality: Banking system hit by coronavirus shock with a clean balance sheet

The portfolio quality of the credit institutions sector was favourable at the end of 2019, with the ratio of non-performing loans falling to below 5 per cent for both companies and households. In both sectors, the ratio of loans over 90 days past due has also fallen to levels not seen in the past 15-20 years. The banking system was thus hit by the pandemic shock with a clean balance sheet and the legacies of the 2008 crisis behind it.

The economic shutdown caused by the coronavirus may once again increase the ratio of non-performing loans. Although the payment moratorium imposed by the government helps to maintain the liquidity position of companies and households, after the expiration of the moratorium it is expected that delinquencies – and already during the moratorium – credit risk and credit losses will increase in the vulnerable sectors. Based on the sectoral distribution of the collateralisation of the vulnerable corporate loan portfolio and the ratio of impairment recognised previously on non-performing loans, we expect on average impairment levels at around 60 per cent on exposures that become non-performing as a result of the coronavirus. Debtors at workout companies have already had problems repaying their loans, and due to the epidemic these clients are facing new difficulties.

Banks need to pay particular attention to contributing to reorganisation with restructuring in the case of viable companies following this temporary shock, which is not sufficiently supported by the current regulatory environment (bankruptcy proceedings). However, in the case of exposures relating to permanently non-viable companies, it is extremely important that they be cleared quickly and that loans which are problematic over the long term do not burden bank balance sheets for years to come, as in the previous crisis episode. In the future, this effort will also be supported by the MNB's macroprudential and supervisory instruments, if necessary.

Chart 54: Ratio of non-performing corporate loans in the credit institution sector

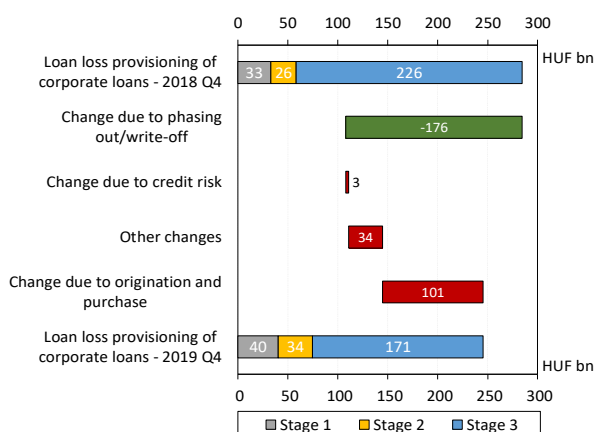


Note: The definition of non-performing loans changed in 2015. From then on, in addition to the loans over 90 days past due, loans less than 90 days past due are also classified as non-performing if non-payment is likely. Calculated by clients until 2010 and by contracts from 2010. Source: MNB

5.1 Corporate loans which become non-performing may require an average impairment of around 60 per cent

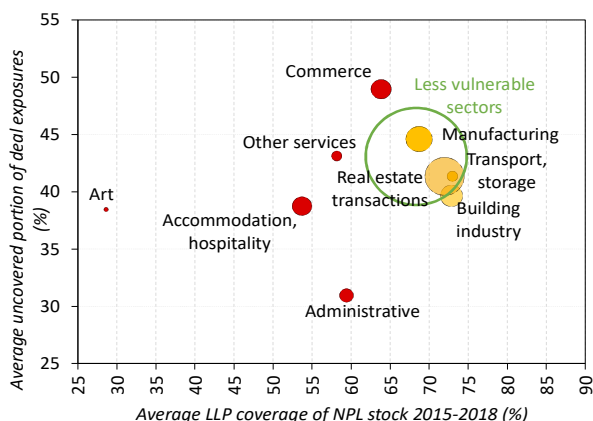
The ratio of corporate loans over 90 days past due has fallen to a level not seen for 20 years. Following an annual decline of 21 per cent, the non-performing corporate loan portfolio of the credit institutions sector amounted to HUF 321 billion at the end of 2019, of which 61 per cent (HUF 196 billion) consisted of loans over 90 days past due (Chart 54). By the end of 2019, loans outstanding with over 90 days past due decreased by 28 per cent on an annual basis, which is mainly due to the cleaning activity: in 2019, the credit institutions sector sold or wrote off non-performing debts in the amount of HUF 92.2 billion. Due to the declining portfolio, the ratio of non-performing corporate loans in the credit institutions sector decreased by the end of 2019 by 1.6 percentage points to 3.9 per cent on an annual basis. The ratio of loans over 90 days past due dropped by 0.8 percentage point during the year to 1.5 per cent at the end of December, thus falling below the levels seen in 2001-2002. By the end of 2019, the default rate of project loans had also fallen below the desirable 5-per cent range to 4.6 per cent, while for other loans it was 3.6 per cent.

Chart 55: Loan loss provisioning for the credit institution sector's corporate loan portfolio and its change in 2019



Note: Stage 1: loan loss provisioning for financial assets whose credit risk has not increased significantly since the initial recognition. Stage 2: loan loss provisioning for financial assets whose credit risk has increased significantly since the initial recognition, but the value of disbursed amounts has not yet decreased. Stage 3: loan loss provisioning for non-performing financial assets. Source: MNB

Chart 56: Average and loan loss provision coverage ratio of uncovered parts of corporate loans at transaction level by sectors



Note: Red shows the sectors directly exposed to the adverse effects of the pandemic, yellow shows the sectors indirectly affected, and green indicates the aggregated data of less vulnerable sectors. The transaction-level uncovered parts were calculated based on the total sectoral loan exposures and collateral values at the end of 2019, and the loan loss provision coverage ratio of non-performing loans was calculated based on the average sectoral non-performing loan and impairment portfolios for the period 2015–2018. Source: Central Credit Information System, MNB

The low default rate shows that the sector has overcome the legacy of the 2008 global financial crisis and is facing the current crisis with a clean balance sheet.

Loan loss provisions for corporate loans decreased in 2019. Looking ahead, impairments on loans in sectors vulnerable to the coronavirus are expected to increase. In the credit institutions sector, the decrease in the loan loss provision of the corporate loan portfolio was supported by cleaning activity in 2019. The reversal effect of the cleaning of HUF 176 billion also offset the HUF 101 billion increasing effect of the origination loan loss provision inherent to the dynamically expanding lending (Chart 55). The cumulative effect of changes in credit risk at the sector level (increasing effect of HUF 3 billion) was minimal in 2019. In the composition of the loan loss provision, the Stage 1²⁰ category increased by 23 per cent and Stage 2 by 34 per cent in 2019, while Stage 3 decreased by 24 per cent. At the end of 2019, the loan loss provision coverage ratio of non-performing loan portfolio of credit institutions was still high, at 54 per cent, and in the case of the non-performing portfolio over 90 days past due, it was 73 per cent. Looking ahead, however, along with the adverse effects of the coronavirus epidemic, an increase in loan loss provisioning is to be expected, in particular in the case of the economic sectors most exposed to the epidemic. Even with the payment moratorium, the deteriorating economic environment may result in deteriorating credit risk and increased impairment.

Loans which become non-performing could result in average impairment levels of around 60 per cent in the sectors most exposed to the negative consequences of the pandemic. The imposition of a precautionary payment moratorium does not *per se* automatically result in loans being classified to a higher impairment category (Box 7). However, the deteriorating economic environment of borrowers may lead to increased credit risk even without technically falling into delinquency, which leads to classification into a higher impairment category and loan loss provisioning. The unsecured portion of loans of vulnerable sectors exposed to the effects of the coronavirus crisis ranged from 31 to 49 per cent and averaged at 42 per cent in the credit institutions sector at the end of 2019 (Chart 56). In connection with non-performing loans of companies in vulnerable

²⁰ IFRS 9 specifies three categories of impairment to reflect the risk of individual and portfolio-level assets. Stage 1: This category includes non-problematic loans that are subject to impairment for expected loss over a one-year period. The second and third categories (Stage 2-3) include exposures that encountered a problem. Stage 2: An exposure is classified to this category if there is a material deterioration in any of the associated risk conditions. Stage 3: This category includes non-performing loans.

sectors, between 2015 and 2018 credit institutions created loan loss provisions averaging 69 per cent. The loan loss provision coverage ratio of corporate loans in the credit institutions sector was the highest in the referenced period, and thus these values can serve as an approximation to estimate the impairment requirements for loans that become non-performing.

BOX 7: IMPAIRMENT CLASSIFICATION OF LOANS UNDER IFRS 9 DURING THE PAYMENT MORATORIUM

The adverse effects of the pandemic directly impact some sectors (including *inter alia* accommodation, catering, trade), but through sectoral links all sectors of the economy are affected, and households are impacted as well via employment and payroll processes. These effects may also appear in the financial system relatively quickly due to the late repayment of corporate and household loans. On 18 March 2020, the government introduced a precautionary payment moratorium until the end of 2020, which automatically applies to both household and corporate loans, to help economic actors and households vulnerable in the context of the pandemic and to avoid the development of stability risks to the financial system.

The deteriorating economic environment and outlook during this public health emergency, the nine-month arrears on instalments and the extension of maturity following the moratorium raise the issue of increased credit risk for credit institutions and in this context, the need for reclassification between IFRS 9 impairment and performance categories. Although under different conditions, a loan repayment moratorium has been introduced in several countries and, at the request of institutions and national supervisory authorities, the European Banking Authority (EBA) has issued guidelines on the impact of such measure on credit risk.²¹ According to the EBA, if a loan repayment moratorium aimed at mitigating the effects of the pandemic is not tailored to individual debtors but is generally introduced for a wide range of credit products or clients, its use does not *per se* require the automatic reclassification of exposures as forborne or under IFRS 9 as loans with increased credit risk (Stage 2) or non-performing loans (Stage 3).

However, credit institutions must continue to assess the credit quality of debtors using the moratorium and to identify cases with increased probability of default. If developments that go beyond the temporary liquidity problem remedied with the moratorium and permanently undermine the solvency of debtors are identified, credit institutions should

Key features of the stages according to IFRS 9

	Stage 1 <i>Performing transactions</i>	Stage 2 <i>Underperforming transactions</i>	Stage 3 <i>Impaired transactions</i>
Household loan portfolio	6135 HUF bn	442 HUF bn	280 HUF bn
Corporate loan portfolio	7284 HUF bn	643 HUF bn	311 HUF bn
Level of credit risk	Low risk or there has been no significant increase in credit risk since entry.	Credit risk has increased significantly since entry.	Since entry, credit risk has increased significantly and credit losses have been incurred.
Expected level of impairment	Expected loss for 12 months	Expected loss over full term	Expected loss over full term
Basis of interest calculation	Gross exposure	Gross exposure	Net book value

Source: MNB

take this into account and reclassify the relevant outstanding loans to a higher impairment category (Stage 2, 3) in the event of a significant increase in credit risk, and must at the same time form higher loan loss provisions.

As under the IFRS 9 guidelines, each institution develops its own methodology for identifying significantly increased credit risk, practices at the individual Hungarian credit institutions also differ. The most commonly used indicators to identify increased risk are the number of days past due, deterioration of the customer or transaction rating, an increase in the probability of default (PD), or an adverse change in collateral. As the methodologies of the individual credit institutions may use risk indicators with different weights, and may also use them as a joint or alternative condition in the risk assessment, the rise in impairment is expected to show a heterogeneous picture across the institutions in the

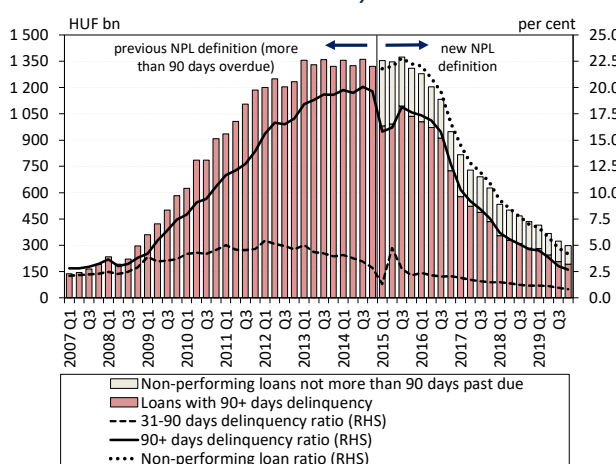
²¹ [Statement on the application of the prudential framework regarding Default, Forbearance and IFRS9 in light of COVID-19 measures](#)

sector. In general, an increase in impairment is expected for both the household and corporate loan portfolios, even during the moratorium.

Impairment is determined under IFRS9 by calculating the expected loss, which is calculated as the probability-weighted average of the impairment calculated by the institutions under different scenarios. Under the economic circumstances which have arisen as a result of the pandemic, institutions will certainly re-weight their expectations, as a consequence of which unfavourable scenarios will be given more weight in the next period than previously. In the loss given default (LGD) over the exposure, the decrease in collateral value, the increase in the time needed to sell collaterals, as well as the increase in interest rates, thus the interest rate used to discount the cash flows from transactions, and the deteriorating recovery rate all have an impact to increase the loan loss provisioning coverage ratio. These factors can increase impairment even for non-performing portfolios.

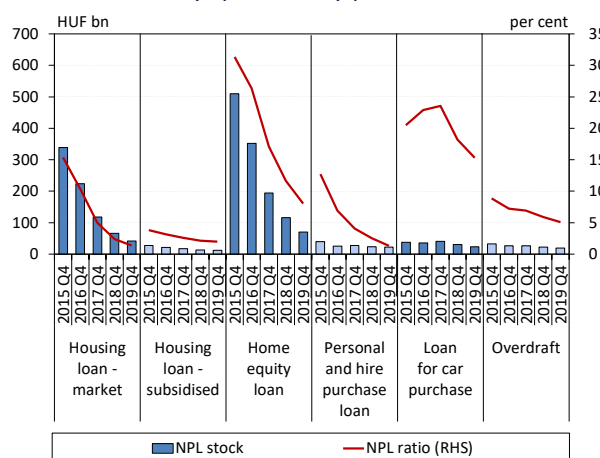
5.2 With rising unemployment, the retail default rate may also increase over the medium term

Chart 57: Ratio of non-performing household loans of credit institutions by contracts



Note: Before 2015 Q1 the non-performing loan ratio shows the ratio of loans over 90 days past due. Source: MNB

Chart 58: Ratio and stock of household loans over 90 days past due by product

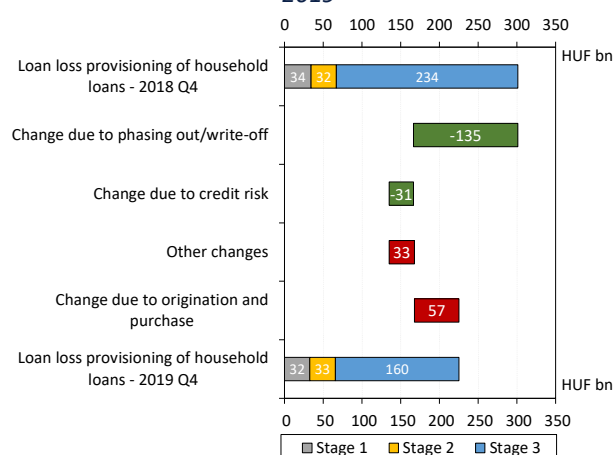


Note: Data of the banking sector and branches. Source: MNB

The non-performing household loan portfolio decreased by almost one-third in 2019. The non-performing household loan portfolio in the credit institutions sector decreased by 31 per cent in one year to HUF 299 billion by the end of 2019 (Chart 57). Loans outstanding over 90 days past due amounted to HUF 191 billion at the end of the year, amounting to almost two-thirds of the total non-performing portfolio and was 33 per cent lower than one year earlier. The default rate of the household loan portfolio was 4.2 per cent at the end of last year, reflecting a decrease of 2.8 percentage points on an annual basis. The default rate on loans over 90 days past due was 2.7 per cent at the end of December, having fallen by 1.9 percentage points to the pre-crisis levels of 2003-2005. The decrease in the ratio of the non-performing loan portfolio was mainly due to cleaning activities by banks (HUF 117 billion), but the increase in loans due to dynamically expanding lending also played a significant role.

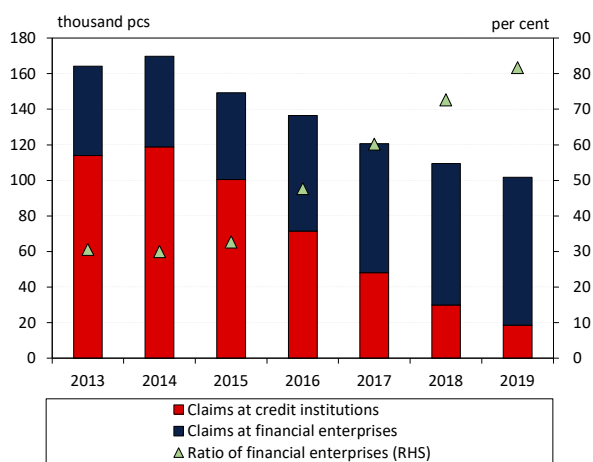
The decline in the mortgage-backed delinquent portfolio was the largest in terms of volume. In an annual comparison, a decrease was observed by the end of 2019 for all retail loan products, both in terms of the portfolio and the proportion of loans over 90 days past due (Chart 58). In the home equity loan segment, loans outstanding over 90 days past due decreased the most, falling by HUF 46 billion year-on-year, but these loans still have the highest default rate (8 per cent) among mortgage-backed loans and the largest weight within all household loans. In the case car purchase loans over 90 days past due with the highest default rate, the default rate fell to 15.3 per cent, following a decline of 3 percentage points. Housing loans with market interest rates, as well as personal and hire purchase loans had the lowest default rate of 1.3 per cent. While the low default

Chart 59: Loan loss provisioning for the credit institutions sector's household loan portfolio and its change in 2019



Note: Stage 1: loan loss provisioning for financial assets whose credit risk has not increased significantly since the initial recognition. Stage 2: loan loss provisioning for financial assets whose credit risk has increased significantly since the initial recognition, but the value of disbursed amounts has not yet decreased. Stage 3: loan loss provisioning for non-performing financial assets. Source: MNB

Chart 60: Change in the number of overdue household mortgage loan receivables between 2013 and 2019



Source: Central Credit Information System, MNB

rate on housing loans with market rate was due to a significant, 37 per cent, decline in the non-performing portfolio, the main driver in the case of personal and hire purchase loans was the expansion of the loan portfolio.

The vulnerability of companies due to the pandemic will also affect the risk of household loans. As in the case of the corporate loan portfolio, cleaning activity also played the strongest role in the decrease in loan loss provisioning on the household loan portfolio in the credit institutions sector in 2019. At sector level, cleaning activities reduced impairment by HUF 135 billion, and as a result of the positive change in credit risk, an additional HUF 31 billion loan loss provision could be released (Chart 59). In the composition of loan loss provisions, the Stage 1 category decreased by 6 per cent on an annual basis, Stage 2 increased by 2 per cent, while Stage 3 decreased by 32 per cent in 2019. At the end of 2019, the loan loss provision coverage ratio of non-performing household loan portfolio of credit institutions was still high, at 55 per cent, and in the case of the non-performing portfolio over 90 days past due, it was 63.8 per cent. In the next year, we also expect a significant increase in impairment on household loans, which can be attributed to the loss of income and rising unemployment.

Debtors at workout companies are still repaying their previous obligations, while they face a new shock. 82 per cent of the approximately 102,000 debts arising from mortgage loans over 90 days past due are already managed by financial enterprises (Chart 60). Debtors of these debts are confronted with the coronavirus shock in such a way that they have not been able to settle their previous problematic loans. For 61 per cent (HUF 449 billion) of past due household mortgage portfolio we do not have income and employment data, and in their case it can be assumed that many debtors do not have permanent jobs; thus, they are in the most vulnerable position. Of the overdue household mortgages for which we have employment and income data, at the end of 2019, about HUF 120 billion (42 per cent) were loans to employees most vulnerable in terms of the pandemic. In addition, these households are increasingly affected by the slowdown in real estate market activity: namely, in the event of a slower increase in prices or a decrease in certain regions, debtors are less likely to be able to get rid of their delinquent debt by selling the collateral.²²

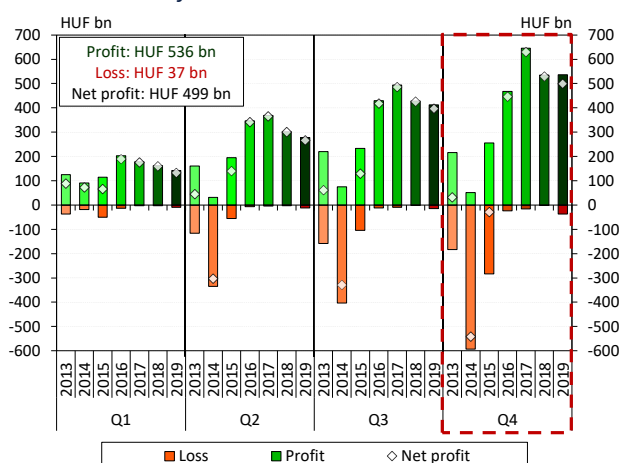
²²In the Financial Stability Report of May 2019, we presented in detail that although housing prices have risen sharply on a national average in recent years, this price increase has not had an impact in some districts. These districts also have a higher proportion of delinquent debtors with high loan-to-value ratio.

6 Profitability, efficiency, capital position: High capital buffers before the expected income shock

The credit institution sector achieved an after-tax profit of HUF 499 billion in 2019, which increased the sector's profit achieved since 2016 to HUF 2,100 billion. Return on equity decreased by 1.9 percentage points to 11.6 per cent due to a decrease of HUF 29 billion in profit and an 11-per cent increase in equity. Considering the income components as a ratio of total assets, the largest negative change occurred in net interest income and net impairment in 2019. The profit-improving effect of the latter component continued to decline, and in the loan portfolio, negative loan loss provisioning already had a greater weight compared to reversals. Although central bank and government measures will mitigate the economic effects of the pandemic in the short term, despite the relief measures, banks' loan loss provisioning may increase as soon as this year, and further losses are expected in the medium and long term depending on economic developments. Nearly one-third of the interest income realised on the loan portfolio in 2019 can be attributed to the vulnerable clients affected by the pandemic, and for a significant part of the sector, more than 30 per cent of the total interest income comes from the affected portfolios. The availability of the Hungarian banking services through digital channels is limited, which may cause problems for some banks to adapt to the current pandemic situation.

As a result of stable, high profitability, the banking system is facing the challenges raised by the pandemic with a strong capital position. Hungarian banks have reinvested a significant portion of the profits of the last four years into their operations, and thus equity has increased by almost one-half compared to the end of 2015, which has resulted in a robust capital position. In December, the sector's capital adequacy ratio reached 17.5 per cent, 18.1 per cent with the total year-end profit included. With the release of regulatory capital buffers, on a balance sheet total basis, the level of own funds above the Pillar I requirement, expressed as a ratio of the total risk exposure amount, exceeds even 8% for 94% of the sector.

Chart 61: Year-to-date cumulative after-tax profit or loss of the credit institution sector



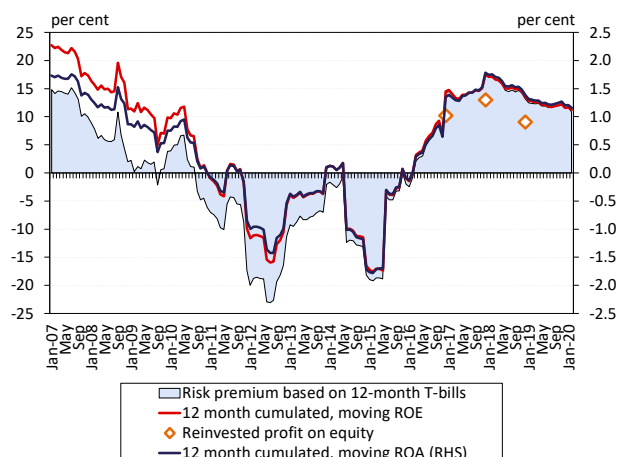
Source: MNB

6.1 The pandemic threatens the outstanding profits of recent years via a number of channels

The Hungarian banking system has realised outstanding profits in recent years. The credit institution sector posted an after-tax profit of HUF 499 billion in 2019, according to non-consolidated data, which is lower than the previous year's figure by HUF 29 billion (Chart 61). In the period under review, the consolidated profit, which includes the profit of both Hungarian and foreign subsidiaries, was HUF 692 billion, which in turn exceeds the year-end profit of 2018 by HUF 44 billion. According to non-consolidated data, the number of loss-making institutions increased to 8 in 2019. The market share based on the balance sheet total of these institutions amounted to 13.3 per cent. Over the past four years, the credit institution sector has achieved – with profitability that is also outstanding in a regional comparison – a total profit of HUF 2,100 billion.

The owners reinvested a substantial share of the high profit to banking operations, thus helping to boost shock absorbing capacity. In line with the decline in nominal income, return on equity (ROE) decreased to 11.6 per cent

Chart 62: 12-month rolling after-tax return on equity of credit institutions



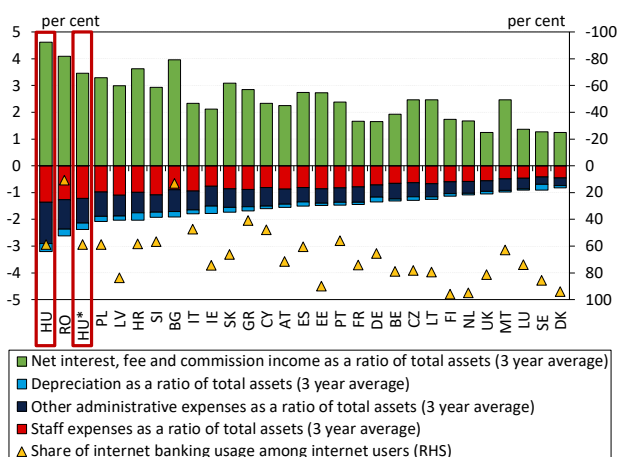
Note: Reinvested profit as a ratio of equity includes the year-end profit less dividends to be paid out the following year.
Source: MNB

Table 6: 12-month rolling income components as a ratio of total assets

Components as a ratio of total assets	2017 Q4 position	2017 Q4-2018 Q2 change	2018 Q2-2018 Q4 change	2018 Q4 position	2018 Q4-2019 Q2 change	2019 Q2-2019 Q4 change	2019 Q4 position
Net interest income	2.18%	-0.12%	0.03%	2.09%	-0.02%	-0.16%	1.91%
Commission and fee income	1.44%	-0.02%	0.01%	1.42%	0.01%	0.03%	1.46%
Net trading income	0.41%	0.05%	-0.05%	0.41%	-0.09%	0.05%	0.37%
Operating expenses	-2.04%	0.01%	-0.07%	-2.10%	0.03%	0.05%	-2.02%
Net impairment	0.52%	-0.15%	-0.20%	0.16%	-0.04%	-0.01%	0.11%
Dividends	0.29%	-0.05%	-0.01%	0.23%	0.03%	-0.02%	0.24%
Bank levy	-0.12%	0.01%	0.01%	-0.10%	0.00%	-0.01%	-0.12%
Other	-0.89%	0.05%	0.11%	-0.72%	-0.05%	0.02%	-0.75%
After-tax income	1.78%	-0.24%	-0.16%	1.39%	-0.14%	-0.05%	1.20%

Source: MNB

Chart 63: Income and expenses as a ratio of total assets in an international comparison



Source: MNB, ECB, Eurostat

and return on assets (ROA) to 1.2 per cent by end-December 2019, which, on an annual basis, corresponds to a negative change of 1.9 percentage points and 18 basis points, respectively (Chart 62). Based on the amounts of dividends paid out from the 2016-2018 profits, the owners of Hungarian credit institutions reinvested about 70 per cent of the profit into the operation of the sector. The result for 2019 is expected to increase the sector's equity to its full extent due to the MNB's call for the deferral of dividend payments. Continuing the favourable trends of previous years, the sector's equity increased by nearly one-half in real terms compared to the year-end value of 2015, which can be considered a favourable circumstance in view of the public health emergency related to Covid-19.

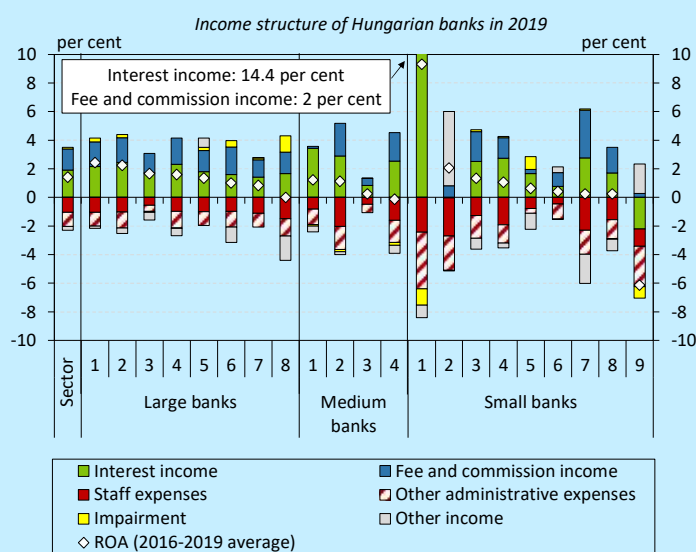
The profit impact of net impairment turned negative if one-off items are filtered out. Based on the income components as a ratio of total assets, a realignment in the structure of the banking system's revenues could be observed: while net interest income fell by about 18 basis points in the past year, net commission and fee income increased by 4 basis points (Table 6). Operating expenses of the sector increased in nominal terms, but this item improved as a ratio of total assets due to a more than 10-per cent increase in the balance sheet total. As in previous years, the effect of net impairment was still positive; however, this was mainly due to individual items. Examining the impairment of loans separately – and by eliminating the one-off off-loan-portfolio items – the balance of loan loss provisioning and reversals turned negative in 2019. As a result of the combined effect of all income components, the 12-month rolling return on assets decreased by approximately 18 basis points compared to the end of 2018.

The low efficiency of the Hungarian banking system makes it more vulnerable to downturns on the revenue side. The operating expenses of the Hungarian banking system, considered to be high by international standards, are associated with proportionally high core income items (interest, commission and fee income). Regarding all three sub-components of operating expenses, the Hungarian banking system is a laggard in an EU comparison (Chart 63). “Covering” high operating expenses with outstanding revenues is not only detrimental for competitiveness reasons, but also reduces the sector's adaptability to sudden revenue-side declines and risk costs. This is because the high-cost banking strategies based on personal service and an extensive branch network characteristic of most Hungarian banks, cannot be flexibly adapted to a situation such as that caused by the spread of the pandemic (Box 8). One way to increase efficiency is through technological

developments, as evidenced by the strong correlation between operating expenses and other efficiency and digitalisation indicators (e.g. the proportion of Internet users). The need for the digitalisation of internal operations and sales and administration channels has also become directly apparent in the context of the pandemic, and will presumably encourage stronger progress in banking developments.²³

BOX 8: DIFFERENCES IN THE INCOME STRUCTURE AND EFFICIENCY OF HUNGARIAN BANKS AT AN INDIVIDUAL LEVEL

The challenges caused by the pandemic in the operational and business environment are testing the business and income strategies of Hungarian banks followed in recent years. The profit of the banking system increased significantly in 2016 after the loss-making period of the previous crisis and reached a record high in 2017, mainly due to impairment reversals. The positive trend was typical of most institutions, but in 2019 – as a result of diminishing reversals and the low interest rate environment – only a few credit institutions were able to increase their return on assets (ROA). Although all institutions are in a good position in terms of capital adequacy, the long-term sustainability of capital and stakeholders' expectations, i.e. returns exceeding the cost of equity (CoE), must also be supported by a profitability of a healthy level and structure. However, in the case of several institutions, it can be stated that the level and structure of revenues are not sufficient to exceed the cost of equity after the recognition of operating expenses and lending losses.



Note: Other administrative expenses include depreciation, while other income includes financial operations income, dividend income and banking tax as well. Source: MNB

increased by 8.7 percentage points to 50.1 per cent between 2015 and 2019. The credit activity declining due to the pandemic may stimulate the trend decline in interest income, while the direction of future changes in commission and fee income is unclear, given that payment services, the card business, but even investment services may develop favourably, partly due to changing banking habits and savings preferences as a consequence of the pandemic.

Despite the strong profit-shaping effect of external factors, the 2019 profit structure of credit institutions shows a heterogeneous picture. Hungarian banks show significant differences in the level of their operating expenses as a ratio of total assets, as well as in the level and structure of revenues offsetting these costs. Regardless of bank size, there

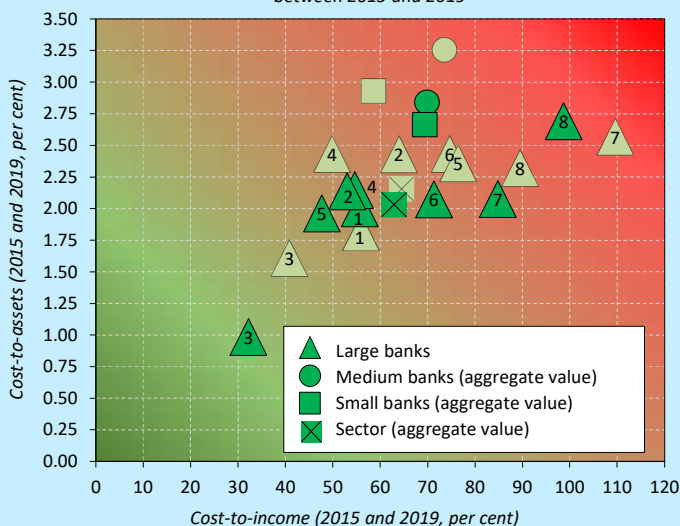
The profit structure of banks as a ratio of total assets has changed substantially over the last four profitable years. Not considering the positive swing due to the increase in interbank yields in the second half of 2018 and the first half of 2019, interest income trended downwards for large, medium and small banks alike. The decline in interest income recognised on both loans (and deposit claims) and securities exceeded the decline in expenditures, an indication of revaluation limits. The loss of interest income was compensated by the majority of institutions by increasing or maintaining the net commission and fee income, as a result of which the ratio of commission and fee income (reduced by the transaction tax) to interest income

²³ For a comprehensive analysis of the digitalisation situation of the Hungarian banking system, home office and sales via digital channels, see the MNB's [FinTech and Digitalisation Report](#) published in April 2020. The advancement of FinTech solutions catalyses regulatory modernisation as well, a process that can also be supported by the creation of innovative frameworks, mostly through the establishment of *Innovation Hubs* and *Regulatory Sandboxes* based on international practice. MNB was one of the first authorities in Europe to establish such frameworks.

are institutions where revenues are just enough to cover costs. In addition, in many cases, more volatile items (e.g. net trading income) or reversals of impairment account for a significant portion of profitability, but the long-term sustainability of the income from these items is questionable. The favourable profit effect of impairment reversals in recent years has concealed whether a bank's income structure remains unsustainable in the longer term. However, with the outbreak of the pandemic, loan loss provisions are expected to increase once again, and thus, the profitability of inefficient banks or banks with low income potential may decrease substantially.

Some institutions have not taken advantage of the favourable economic environment in recent years to improve their efficiency. The Hungarian banking system also shows a heterogeneous picture in terms of how the efficiency of

The change of Hungarian banks' efficiency indicators between 2015 and 2019

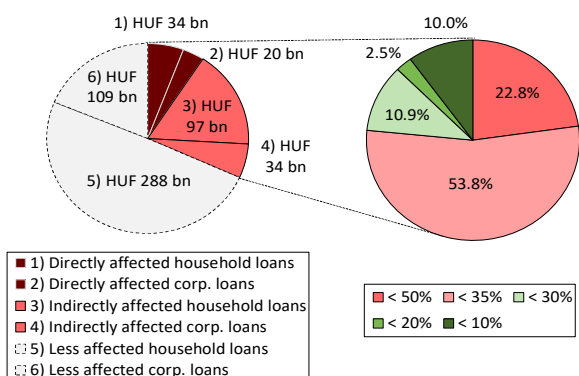


Note: The paler colour represents data as of 2015, the darker data as of 2019. Source: MNB

individual banks (assessed by cost-to-assets and cost-to-income ratios) changed between 2015 and 2019. For some institutions, efficiency has not improved in the recent profitable years at all and in several cases it has even deteriorated. In the case of banks, where a positive shift can be observed, this has been realised despite the almost general increase in depreciation and the level to which it can be attributed to the reduction of personnel expenses and other administrative expenses as a ratio of total assets varies among institutions. In terms of infrastructure, several institutions show progress, at a different pace, in downsizing the branch network. The number of branches decreased by 30 per cent at the system level compared to December 2015, while the number of employees increased in the case of many banks in parallel with the expanding capacity needs

of each operating area, while practically stagnating at a sector level. However, the streamlining of the branch network and the number of staff does not necessarily lead to an immediate improvement in efficiency. In the future, however, it will be inevitable for poorly performing credit institutions to catch up with more advanced institutions along all dimensions of banking digitalisation. In addition to the development of infrastructure and digital solutions, deepening financial penetration and consolidation within the sector can also catalyse the increase in efficiency and sustainable profitability.

Chart 64: Estimates of interest income on loans (left) and distribution of sector assets based on the ratio of affected interest income (right)



Note: The chart on the left shows a breakdown of estimated interest income earned in 2019, while the chart on the right

The public health emergency may affect a significant share of banks' interest income.

Based on the interest income estimate by sectors, Hungarian credit institutions realised nearly HUF 163 billion in annual income in the corporate segment and HUF 419 billion on retail loans (Chart 64). Examining interest income by sub-segments, it can be stated that interest income of HUF 20 billion can be attributed to companies in the sectors directly affected by the spread of Covid-19, and approximately HUF 54 billion to the overall vulnerable corporate loan portfolio. In addition, interest on retail loans identified as vulnerable totalled HUF 131 billion. The distribution of interest income realised in vulnerable sectors among institutions is somewhat concentrated: on a balance sheet total basis, its share is over 30 per cent within the interest income realised on the corporate and retail portfolio in the case of nearly 77 per cent of institutions. However, due to the

shows the distribution of the sector's total assets based on the share of interest income earned on affected corporate and vulnerable retail loans. The ratio of vulnerable retail loans was based on data from 2017. Source: MNB

Chart 65: Short- and long-term profit impact of the pandemic

SHORT-TERM EFFECTS	MID- AND LONG-TERM EFFECTS
The payment moratorium prevents a sudden increase in the riskiness of most clients	The payment moratorium bolsters clients' future payment capabilities
The measures taken by the MNB curb adverse changes in the yield curve	The targeted measures taken by the government lowers the potential increase in credit risk
Change in the present value of interest payments (up to HUF -58 bn)	Forint depreciation affects corporations with open FX position negatively
Some corporations could become non-performing this year	The end of the moratorium might significantly increase the ratio of non-performing loans
The government has decreed a one-time HUF 55 bn tax for banks	
	Demand- and supply-side factors can negatively affect lending dynamics
	The income of foreign subsidiaries might change according to similar factors

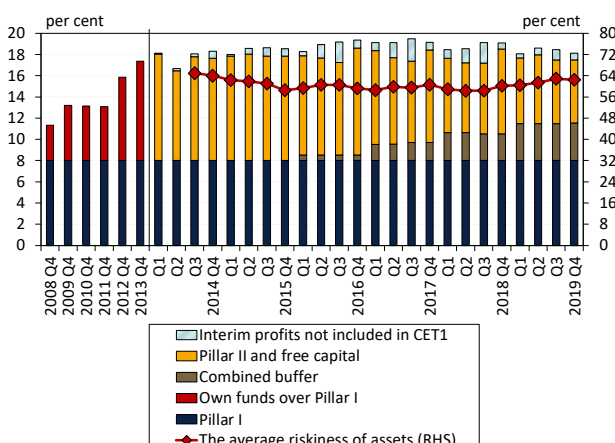
Source: MNB

payment moratorium, the realisation of the decrease in interest income is not yet expected in 2020, it may only affect the results of the subsequent years.

The pandemic impacts banks' income components through a number of other channels as well.

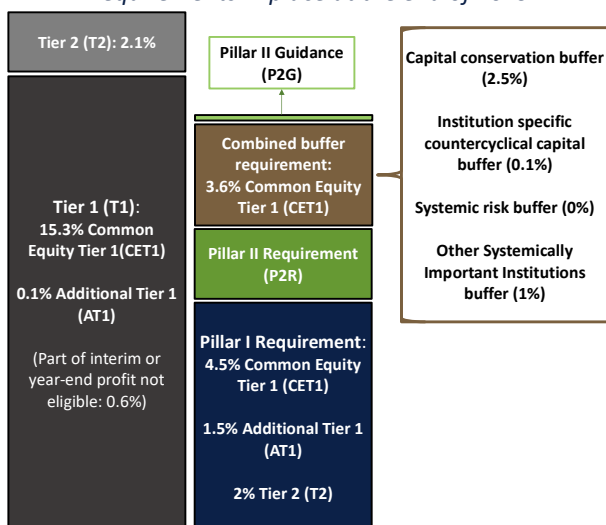
The statutory payment moratorium stipulates the linear repayment of deferred interest income from 2021, and thus banks will suffer a maximum of HUF 50-60 billion losses in 2020 (if the moratorium is fully utilised) due to the decrease in the present value of cash flows. At the same time, the moratorium improves clients' short-term liquidity position, thus providing an opportunity to avoid supply chain disruptions and supporting the maintenance of the economy's viability. The statutory suspension of repayment may also limit the build-up of banking risk costs: although in the case of a significant increase in credit risk banks will have to reclassify companies to Stage 2 under IFRS even during the moratorium, due to the moratorium banks are expected to recognise an increase in risks in fewer cases. In addition, the government obliges credit institutions to pay a one-time bank tax, the amount of which is HUF 55 billion in 2020, which, however, can be deducted in equal instalments from the amount of the current annual bank tax in 5 years starting from 2021. However, the pandemic and central bank and government measures affect the sector's profits this year and in the subsequent years also through a number of other indirect channels (Chart 65). The financial position of the sectors concerned and their employees is also helped by targeted government measures. In addition to the existing loan portfolio, a decline is expected in new lending for both supply- and demand-side factors, which will also reduce banks' primary income components. Commission and fee income may be moderated by the reduction of payment and other non-lending services, but as yet no decline in turnover has been observed. The sensitivity of the yield curve and interest rate risk arising from maturity transformation were mitigated by central bank measures. Institutions' open foreign exchange positions do not pose a substantial risk to the results of financial operations, but the weakening forint exchange rate may increase the riskiness of companies relying on forint revenues and having foreign currency loans. Finally, the profits of foreign subsidiaries in consolidated income and dividend income may also decline depending on the economic and financial developments in the respective countries.

Chart 66: Consolidated CAR of the banking system and average risk of assets



Note: Data prior to 2014 were prepared under different prudential and accounting standards. The average riskiness of assets was calculated as the ratio of the total risk exposure amount and total assets. Source: MNB

Chart 67: The banking system's own funds and capital requirements in place at the end of 2019



Note: T2 and AT1 capital requirements can also be met with capital of higher quality (T1 or CET1 respectively). Source: MNB

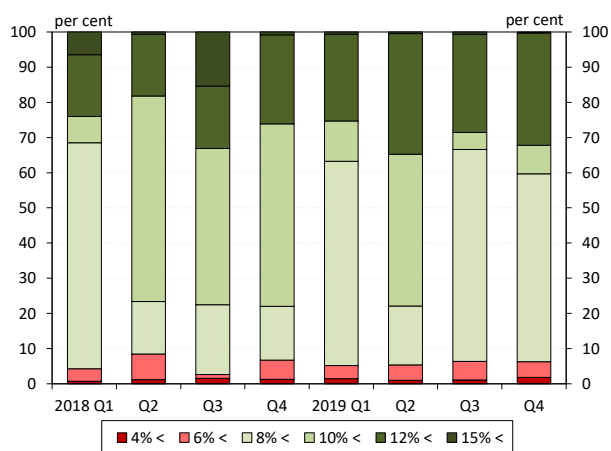
6.2 Strong capital position of the banking sector helps to overcome the shocks caused by the pandemic

The consolidated capital adequacy of the banking system was 18.1 per cent if the total year-end profit is included. Excluding the income of 2019, the total capital adequacy ratio (CAR) of the banking system decreased by 0.5 percentage points to 17.5 per cent as a result of a 12.6 per cent increase in the bank's own funds and a 15.6 per cent increase in the total risk exposure amount (TREA) based on consolidated data, on a semi-annual basis (Chart 66). However, including the part of the year-end profit not yet eligible (before the audit), the ratio was 18.1 per cent. The figure continues to show a satisfactory capital position at the sector level, and all major institutions met, including the capital conservation buffer, the minimum requirement of 10.5 per cent in 2019.

In order to mitigate the effects of the coronavirus, the MNB has taken a number of measures to facilitate banks' capital adequacy. In addition to the fact that, due to the expected lending dynamics, the counter-cyclical capital buffer rate may remain at 0 per cent even in the longer term, the MNB also waived the capital conservation buffer and the systemic risk buffer (SyRB), the latter of which is determined by commercial real estate project loan exposures. The temporary authorisation of the violation of the capital conservation buffer and the release of the capital buffer for systemically important credit institutions (O-SII) in Hungary by the end of 2021, with the free capital beyond that – and the total year-end profit – means nearly HUF 2,050 billion (7.5 per cent in the ratio of TREA) freely available capital. The removal of these requirements will greatly increase banks' room for manoeuvre with regard to lending for economic stimulus and absorbing the potential losses (Chart 67). Postponement of the 2020 obligations for MREL requirements by 6 months will also help to meet the eased requirements.

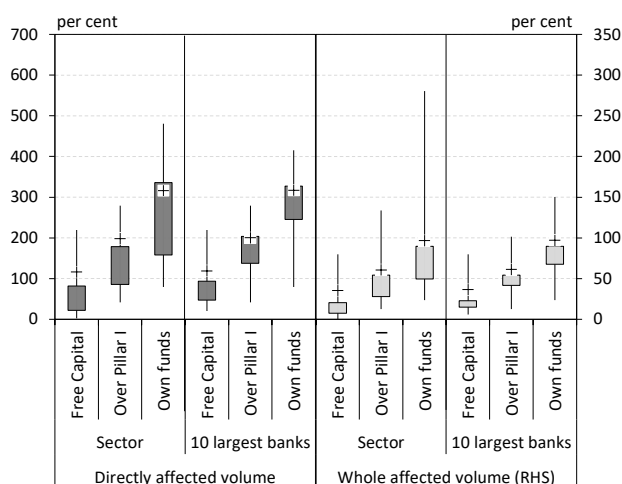
On a balance sheet total basis, the level of capital above Pillar I exceeded 8 per cent for 94 per cent of the banking system. The required capital buffers and free capital above the Pillar II requirement were relatively concentrated at the end of 2019. Nearly 65 per cent of the free buffer was held by three large banking groups, while considering own funds above Pillar I this ratio was 63 per cent. However, on a balance sheet total basis, the volume of capital available to absorb losses can be considered high in a large part of the sector. The combined level of free capital, total year-

Chart 68: Distribution of credit institutions according to the level of own funds above Pillar I weighted by the balance sheet total



Note: The categories indicate the level of own funds as a ratio of the total risk exposure value. Own funds include total interim or year-end profits as well. Source: MNB

Chart 69: Capital buffers as a ratio of loans affected by the pandemic



Note: The 10 largest banks cover nearly 94 per cent of the system's total assets. Free capital and capital above Pillar I include the whole year-end profits. The ratio of vulnerable retail loans is based on data from 2017. Due to their outstandingly high values, data of two small banks were excluded from the chart. The distribution shows the 25-75th percentiles and the minimum and maximum values of analysed institutions. Source: MNB

end profits, the Pillar II requirement and other capital buffers above Pillar I as a ratio of TREA, exceeds 8 per cent for almost 94 per cent of the banking system (Chart 68).

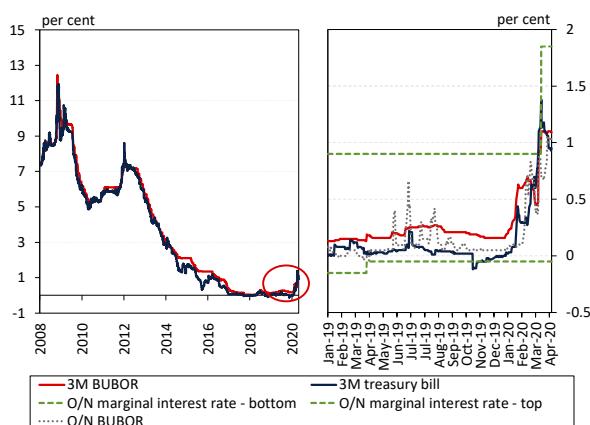
For some banks, potentially vulnerable loan portfolios may pose a higher degree of stability risk.

In addition to the total risk exposure amount, it is also worth examining the capital adequacy of banks as a ratio of directly affected (HUF 1,389 billion) and the total vulnerable loan portfolio affected (HUF 4,549 billion) as identified in the previous chapters. Although for some smaller institutions free capital calculated without easing the capital requirements is already low in terms of the ratio of directly affected corporate and vulnerable household loans, the picture of banks' capital position improves significantly when taking into account the capital above Pillar I (Chart 69). The free buffers of the 10 largest banks accounting for nearly 94 per cent of the sector's total assets, are also relatively high, although free capital fully covers the total affected portfolio only in a few cases. It is important to emphasise, however, that these ratios represent the absolute upper limit of the risks associated with the loan portfolio, which are extremely unlikely to materialise. In the case of even more institutions, the total own funds would be able to cover the losses incurred, and thus – for the majority of banks – the economic agents providing bank funds (for example depositors) would not have to suffer losses even in extreme cases.

7 Market and bank liquidity: Financing of banks is stable, and liquidity is also supported by the central bank

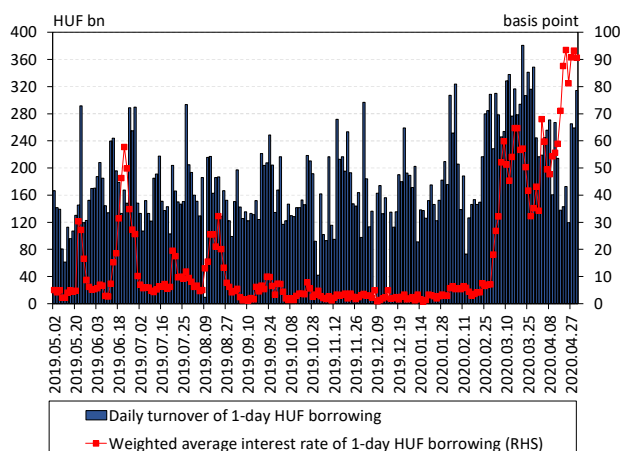
Since the beginning of the pandemic, market yields important for raising funds have risen steadily, while demand for Hungarian government securities has decreased in line with international risk aversion. Despite growing market tensions, funding opportunities have not narrowed, and the effective flow of liquidity is actively supported via the central bank's monetary policy instruments. The banking system's liquidity reserves remain abundant, and its operative liquidity reserve has increased as a result of central bank measures, i.e. the acceptability of large corporate loans against central bank operations and the exemption from reserve requirements. The MNB ensures that less stable foreign currency funds posing a risk to the financing of the banking system are kept low by tightening macroprudential rules. The stable financing of the banking system is also supported by the high proportion of client deposits, but in the event of a prolonged economic downturn caused by the pandemic, both the volume and structure of household and corporate savings may change, which will also directly affect the financing of banks.

Chart 70: Developments in short-term yields



Source: Government Debt Management Agency, MNB

Chart 71: Daily turnover and average interest rate of overnight HUF borrowing



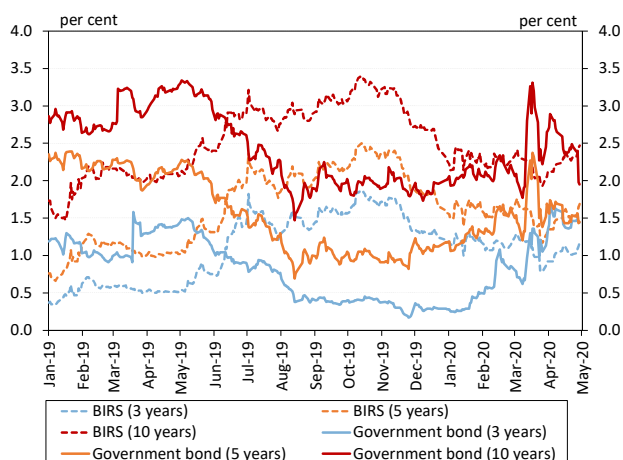
Source: MNB

7.1 Market tensions have increased, but markets important for obtaining liquidity are still available

Since the onset of the pandemic, short-term yields have risen steadily. Short-term yields have risen temporarily since June 2019 and steadily since the onset of the Covid-19 crisis. In the summer of 2019, as a result of the substantial sales of the Hungarian Government Security Plus (MÁP+) and the better-than-expected budget deficit, the stock of the Single Treasury Account (STA) increased significantly, and banking system liquidity narrowed temporarily amid rising yields. Due to inflation data exceeding the MNB's upper target band, followed by the uncertainty caused by the coronavirus, starting from February 2020 short-term yields started to rise sharply again in parallel with an increase in volatility (Chart 70). At the beginning of April, the MNB announced a one-week deposit tender and raised the interest rate on overnight and one-week collateralised central bank loans to 1.85 per cent. With the possibility of tying up the banking system's excess liquidity at 0.9 per cent, the role of overnight deposits decreased, and the cost of short-term fund raising may be around the base rate, or even in the upper half of the expanded interest rate corridor, depending on the pricing of one-week deposit tenders and on the liquidity position.

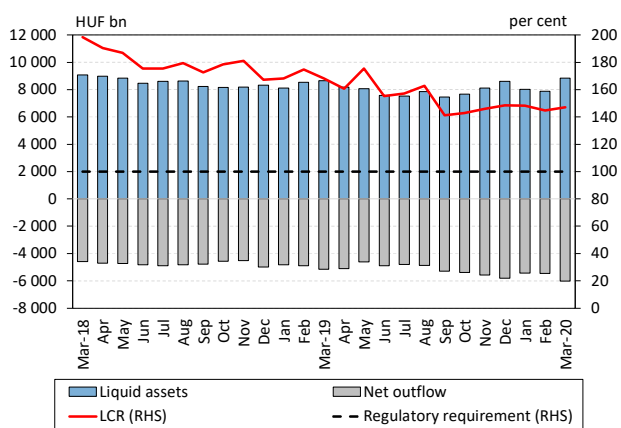
The cost of overnight forint interbank borrowing rose sharply in March, and turnover increased. Due to the uncertainty caused by the coronavirus, interbank yields increased significantly on all maturities and volatility also

Chart 72: Changes in long-term interbank interest rate swaps and government bond reference yields



Source: Government Debt Management Agency, MNB

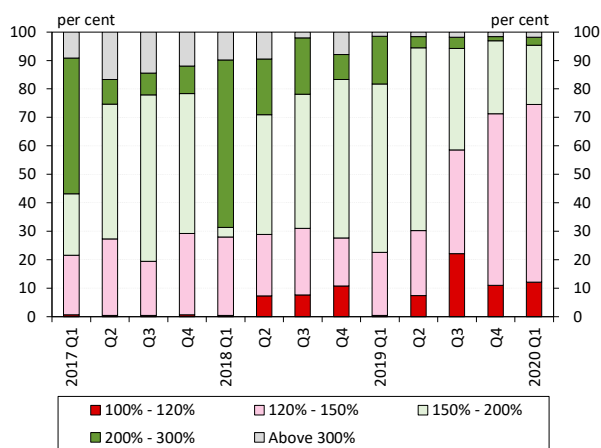
Chart 73: Changes in credit institutions' LCR ratio



Note: Without mortgage banks and building societies.

Source: MNB

Chart 74: Distribution of individual institutions' LCR levels weighted in proportion to the balance sheet total



Source: MNB

increased. On the positive side, however, daily trading activity did not decline in March on the overnight maturity typical of bank fund raising (Chart 71), and the intraday relative standard deviation of yields also did not increase. Due to the negative impact of the virus and the containment measures on the real economy, the world's central banks have once again moved towards easing, and the MNB has also taken a number of liquidity-providing measures.

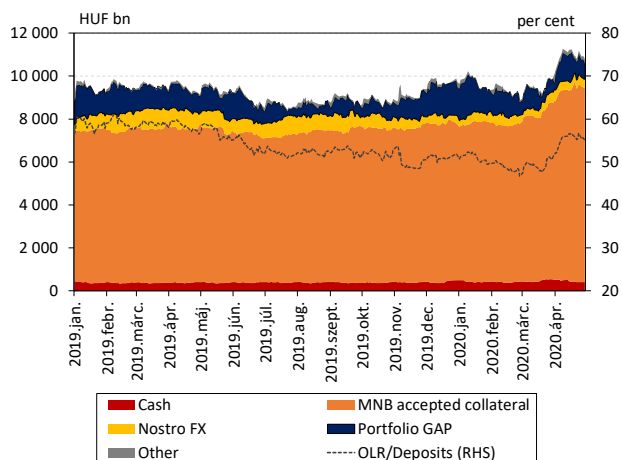
In 2019, the active repos of the Hungarian Government Debt Management Agency (ÁKK) became an important financing channel in the banking system, but in 2020 the liquidity provided by ÁKK may decrease. Due to their specific cyclical character, budget revenues and expenditures may fluctuate significantly; therefore, in order to keep the STA in a narrow range, ÁKK smooths the STA level using free cash management. In 2019, the low budget deficit and the introduction of MÁP+ resulted in a higher level of STA compared to previous years, which was offset by ÁKK's intensive repo activity in the second half of the year.

Since the onset of the pandemic, the volatility of long-term government securities market yields has exceeded that of the banking system's interest rate swaps. Government securities market yields showed higher volatility than bank interest rate swaps on the maturities more important in terms of raising funds (Chart 72). As a result of fears about the coronavirus, demand for Hungarian government securities waned, causing yields to rise quickly. In the interbank interest rate swap market, yields rose moderately and the cost of raising long-term bank funding remained low in a historical comparison. The stabilisation of long-term yields is supported by central bank liquidity-providing measures.

7.2 Liquidity reserves decreased, but the stable financing of the banking system is also supported by the central bank

At the level of the banking system, liquidity buffers exceed the value of probable outflows in the event of a liquidity shock by 47 per cent. High quality liquid assets, serving as coverage for the net outflow in the event of a liquidity shock, amounted to HUF 8,835 billion at the end of March 2020 (Chart 73) and exceeded the probable outflows in the event of a shock by HUF 2,821 billion. In addition to serving as a buffer against cash outflows in the event of a liquidity shock, liquid assets are also important instruments for obtaining liquidity from the central bank. The central bank provides liquidity to banks during the

Chart 75: Decomposition and development of the operative liquidity reserves of banks



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

implementation of its monetary policy within the framework of collateralised credit transactions, in the course of which the securities portfolio pledged by the partner bank to the MNB serves as the collateral.

Liquidity buffers are unevenly distributed among banks, but the regulatory requirements are met by all banks. All banks meet the regulatory expectations, but liquidity buffers declined for most institutions over the past three quarters (Chart 74). Since June 2019, both the number and weighting – as the ratio of the balance sheet total – of banks with a liquidity coverage ratio of less than 150 per cent but still exceeding 120 per cent have increased significantly.

As a result of the central bank's measures, the operative liquidity reserve of credit institutions increased. The day-to-day monitoring of the banking system's liquidity reserves is served by the operative liquidity reserve (Chart 75), which – in addition to liquid assets – shows the contractual net flows of treasury operations (portfolio GAP). From 23 March 2020, in accordance with the parameters set out in the Business Terms and Conditions, the MNB also accepts large corporate receivables as collateral, which however are not part of the liquid assets reported in the liquidity coverage ratio (and may even improve this indirectly in case of an exchange of collateral), but can expand the operative liquidity reserve through the increase of MNB-eligible collateral. From 23 March 2020, the operative liquidity reserve increased significantly, mainly due to the expansion of the scope of MNB-eligible collateral and the usability of the reserve requirement. The operative liquidity reserve of the banking system accounts for more than 50 per cent of corporate and retail deposits, which provides stable coverage for the management of possible liquidity shocks affecting the banking system, including also the management of liquidity effects of the moratorium (Box 9).

BOX 9: EFFECT OF PAYMENT MORATORIUM AND CENTRAL BANK MEASURES ON BANK LIQUIDITY

The imposition and utilisation of the payment moratorium results in liquidity risk transfer from debtors to credit institutions, but the MNB supplies them with the lost liquidity through its expanded instruments. The government imposed a payment moratorium on payment obligations arising from the debts of households, non-financial corporations, financial enterprises and investment funds outstanding on 18 March 2020 until 31 December 2020. Due to the payment moratorium, liquidity stress does not occur in the banking system as a whole, as the deferred repayments appear largely on the liabilities side of the banking system in the form of savings or consumption. However, the distribution of liquidity between banks may be uneven, and therefore, it may be necessary to obtain additional liquidity in order to manage any individual bank-level disruptions.

There are several ways for banks to deal with the problems caused by lost liquidity. The reduction in liquidity caused by the repayments postponed due to the moratorium can be generally covered by banks from several sources (e.g.

interbank loans, central bank instruments and ÁKK repo). In the current situation, however, it is likely that they will rely more heavily on central bank instruments and as a last resort, if necessary, on the sale of their liquid assets. In the event that liquid assets run out or do not prove to be sufficient to provide the necessary liquidity, banks would be forced to limit outflows, such as the provision of new loans. However, in light of the abundant liquidity buffers in the banking system and the liquidity-providing measures introduced by the MNB, this will probably not be necessary.

Postponed repayments due to the moratorium in 2020

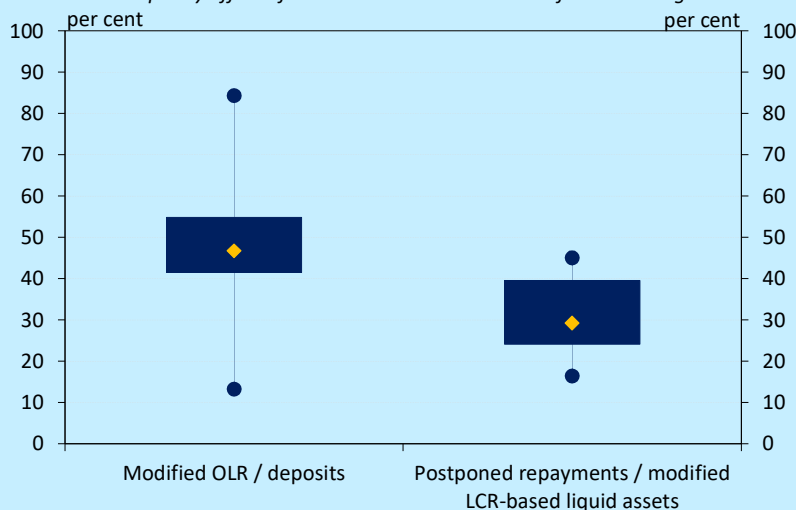
Proportion of clients who take the possibility of the moratorium (%)	Postponed repayments monthly between April and December	Total postponed repayments until the end of December
50	200	1800 (~ 1575)
70	280	2520 (~ 2205)
100	400	3600 (~ 3150)

*Note: Repayments of only households and non-financial companies.
Source: MNB*

As a result of the moratorium, up to HUF 3,600 billion in household and corporate repayments may be postponed by the end of the year. Full utilisation of the moratorium would affect approximately HUF 400 billion per month, amounting to a total of HUF 3,600 billion in household and corporate repayments by the end of the year. Of this, principal repayments amount to approximately HUF 3,150 billion, while interest and fees amount to nearly HUF 450 billion. However, the postponed amount depends largely on the proportion of opt-out clients who continue to repay their debts during the moratorium, which, according to information to date, could be as high as 30 to 50 percent of all clients.

The MNB supports the strengthening of the liquidity position of banks with several measures ensuring the possibility to make up for lost liquidity. On the one hand, within its own scope of decision-making, the MNB also announced a moratorium on the repayment of refinancing loans related to FGS loans to be repaid by banks to the central bank. On the other hand, by extending the scope of eligible collateral for central bank operations to include corporate loans, the collateral value of eligible assets and thus the stock of potential central bank loans increased by HUF 2,500 billion to HUF 9,500 billion in the banking system, based on the data at the end of February. In addition, the MNB also helps banks manage their liquidity by introducing 3-, 6- and 12-month and 3- and 5-year collateralised loan facilities for a number of maturities, as well as by the exemption from meeting the minimum reserve requirement.

Maximum liquidity effect of the moratorium in the case of the nine largest banks



*Note: The minimum, the maximum, the first and third quartile and the average value is shown on the chart.
Source: MNB*

Due to the moratorium, neither the operative liquidity reserve (OLR) nor the LCR is expected to decrease to a level jeopardising the course of business. While the OLR quantifies the actual liquidity a bank has to execute transactions with customers, the LCR shows the extent to which the bank's liquid assets would cover the net outflows of a presumed stress situation that already includes a partial suspension of repayments by clients. As in the OLR, only net outflows under treasury contracts appear but not the outflows from client transactions,²⁴ and the deferred repayments of clients only appear indirectly in the indicator. However, the acceptance of corporate loans and the exemption from the minimum reserve requirements increase the level of OLR with the expansion of liquid assets. After deducting the total postponed repayment from the OLR and adjusting the liquid assets for the effects of MNB measures, without

interbank loans, central bank instruments and ÁKK repo). In the current situation, however, it is likely that they will rely more heavily on central bank instruments and as a last resort, if necessary, on the sale of their liquid assets. In the event that liquid assets run out or do not prove to be sufficient to provide the necessary liquidity, banks would be forced to limit outflows, such as the provision of new loans. However, in light of the abundant liquidity buffers in the banking system and the liquidity-providing measures introduced by the MNB, this will probably not be necessary.

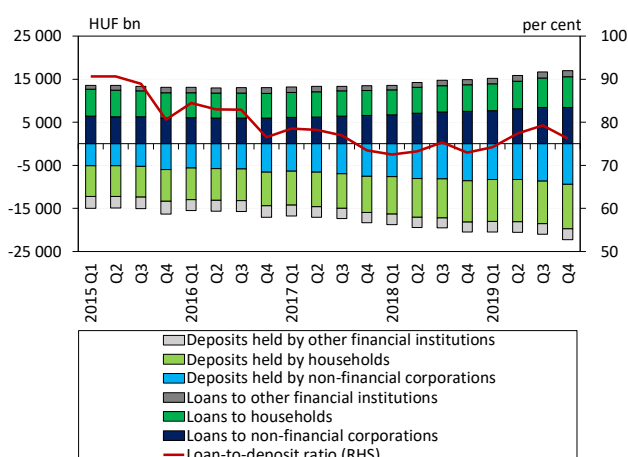
²⁴ Excluding large deposits, i.e. the above-limit part of the deposits of client (group) with deposits exceeding 2.5% of the deposit portfolio.

adjustment by the banks, only in the case of one of the 9 large banks would the OLR, as a ratio of deposits, fall below the 20 per cent value still considered safe as a ratio of deposits.

In the LCR, all repayments due next month appear as an inflow, already at a stressed level, at a 50 percent value in the case of loan repayments. Amounts postponed due to the moratorium lead to an increase in net outflows through a decrease in inflows and thus to the deterioration of the ratio. However, similarly to the OLR, the stock of liquid assets that can be included in the LCR may increase as a result of the MNB measures.²⁵ Compared to the value of liquid assets that can be taken into account in the LCR and adjusted for the effects of the MNB measures, the maximum amount deferred due to the moratorium by the end of the year ranges between 16 and 45 per cent in the case of the large banks. As the presented effects assume the full use of the moratorium, in reality significantly less liquidity effects may occur depending on the proportion of opt-out repayers.

In the turbulent financial situation related to the coronavirus, other factors may also affect the liquidity position of banks, which justifies the MNB's constant attention. The drying up of markets important for obtaining liquidity, the decline in deposits, refinancing with short-term funds or the withdrawal of external funds can all lead to a deterioration in banks' liquidity. So far, these have not caused unmanageable liquidity difficulties, but the MNB continues to closely monitor the liquidity position of banks and the developments affecting it, and is ready to provide the necessary liquidity.

Chart 76: Decomposition of the loan-to deposit ratio of credit institutions



Source: MNB

Stable financing of the banking system is also supported by the high share of client deposits, but the favourable structure of savings could easily change. The dynamic growth in lending to corporations and households continued in 2019, with outstanding lending rising by HUF 298 billion and HUF 738 billion, respectively, compared to the end of June (Chart 76). The increase in deposits even exceeded the increase in loans: corporate deposits increased by HUF 1,074 billion, while retail deposits increased by HUF 512 billion in the period under review. As a result of these changes, the loan-to-deposit ratio decreased by 1.2 percentage points in the second half of 2019. During the second half of 2019, households' forint deposits with credit institutions did not change substantially in the ratio of their financial assets (13.6 per cent), while the same ratio for companies increased from 8.8 per cent to 9.5 per cent. As a result of the pandemic, no significant deposit outflow has been observed from the liabilities side of the banking system so far, but in the event of a protracted crisis, the volume and structure of savings may change significantly, which would directly affect also the financing structure of the banking system.

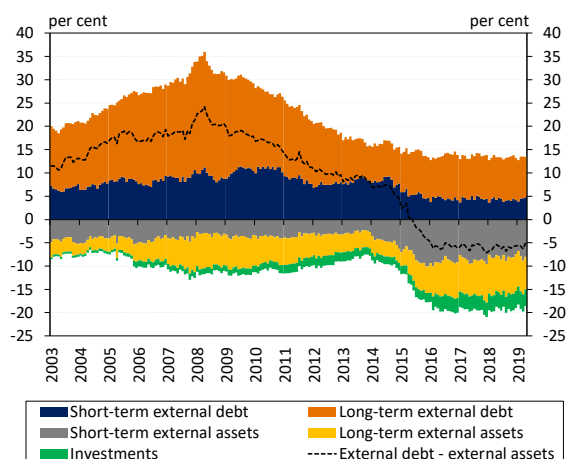
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7.3 The risk of external funds is also mitigated by the MNB's regulatory instruments

Despite the historically low external debt, the sudden withdrawal of external funds may create a substantial

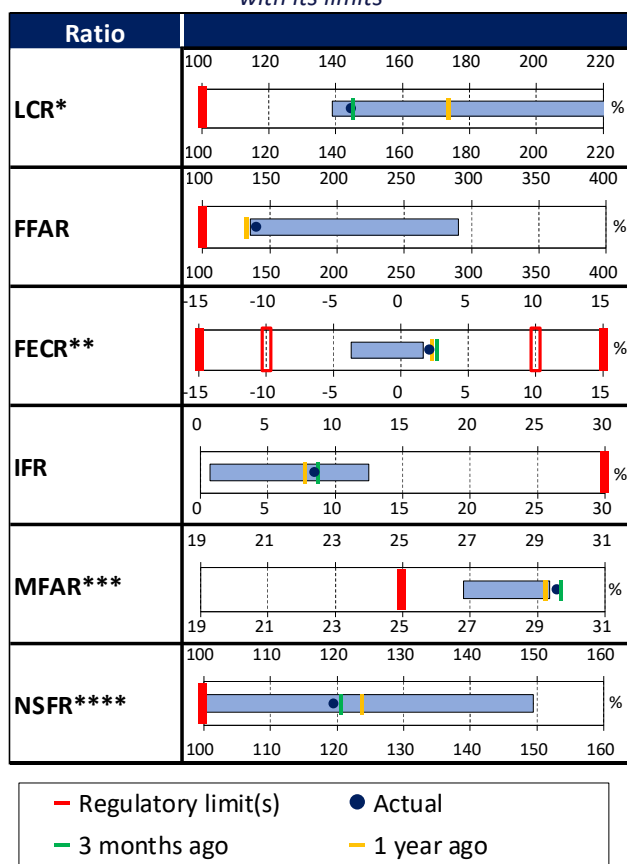
²⁵ With the release of the mandatory reserve, the entire MNB account balance becomes a liquid asset. Although corporate loans eligible to be included as collateral with the MNB cannot automatically be considered as liquid assets, the value of the LCR may increase in the case of blocking corporate loans at the MNB and the parallel release of government securities (collateral exchange).

Chart 77: External assets and liabilities of the banking system in proportion to the balance sheet total



Note: credit institutions sector, including the data of EXIM, MFB and KELER, by original maturity. Source: MNB

Chart 78: The MNB's toolkit for managing liquidity and funding risks, and compliance by the banking sector with its limits



Note: Data as of 29 February 2020 for LCR and FECR and as of 31 December 2019 for the other indicators. * LCR data without

financing need. Relative to the balance sheet total of the banking system, the external debt level has remained below 15 per cent in recent years, which can be considered as a historically low value (Chart 77). However, due to the liquidity management measures²⁶ adopted during the pandemic, it is possible that access to external funds will suddenly decrease. This can affect both short- and long-term funds. In the case of banks which are unable to downsize their external assets at the same time, this could pose a substantial funding risk. The vast majority of institutions have a surplus of external assets on short maturities, and therefore asset-side adjustment should not cause a major problem. The downsizing of foreign assets may be difficult, in particular in the case of financing for foreign subsidiaries.

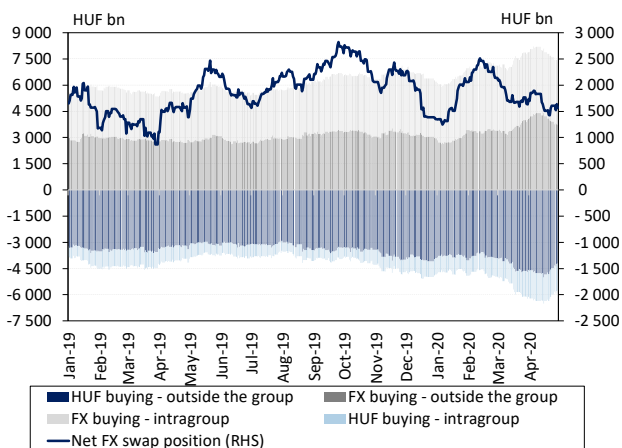
The MNB modified certain elements of its macroprudential instruments in order to mitigate external risks. The MNB employs a number of macroprudential instruments to limit the accumulation of excessive liquidity and funding risks in the banking system (Chart 78). As a result of the pandemic, financial market turbulences affecting systemic liquidity may also occur. To offset the potential effects of these events, the MNB decided on the preventive tightening of the foreign exchange financing regulations, which will improve systemic resilience to financing shocks. In the Foreign Exchange Funding Adequacy Ratio (FFAR), the weighting of funds over one year was differentiated according to the remaining maturity, so that financial corporate funds with a remaining maturity of between one and five years were given less favourable weights than previously. The maximum level of the Foreign Exchange Coverage Ratio (FECR) was tightened from 15% to 10%, thus limiting the currency mismatch in the balance sheet, restricting the possibility of significant unilateral foreign exchange withdrawal and the increase of reliance on off-balance sheet funds. Based on the amendment of the Mortgage Funding Adequacy Ratio (MFAR), cross-ownership restrictions on interbank mortgage bonds have been removed to reduce funding costs. The increase in stable funds involved in the form of mortgage bonds is also supported by the mortgage bond program restarted by the MNB.

A substantial portion of intra-group swaps is exempt from the margin obligation, and consequently the weakening

²⁶The [measure](#) of the Bulgarian central bank on 19 March 2020 increased the liquidity of the banking system by BGN 7 billion (EUR 3.6 billion) by reducing the foreign exposure of commercial banks. This step also meant a rapid reduction of the exposures of the Bulgarian banking system in Hungary.

mortgage banks and building societies. ** From 24 March 2020, the expected level has changed from +/- 15 percent to +/- 10 percent *** From 1 October the expected level is 20 per cent, and from 1 October 2019, 25 per cent. **** Currently not effective regulation; it will enter into force in 2021. Source: MNB

Chart 79: FX swap position of the banking system



Source: MNB

forint exchange rate only undermines banks' liquidity to a slight degree. In 2019, credit institutions had an average net foreign exchange buying position of HUF 1,890 billion, which did not change substantially in the first quarter of 2020 (Chart 79). The foreign exchange buying swap position consists of a spot foreign exchange buying transaction and a forward foreign exchange selling transaction, which would mean the obligation to pay margin calls in the event of a weakening forint exchange rate. However, the vast majority of Hungarian banks are at least partially exempted from the margin obligation vis-à-vis foreign group members: in March, 43 per cent of intra-group foreign exchange buying positions were exempted from variable and initial margin requirements, while an additional 38 per cent were exempted from only the initial margin requirements. Therefore, the balance of margin accounts is basically determined by transactions outside the group. The latter shows a net forint buying position, and thus the banking system has net margin receivables from its swap positions.

8 Bank stress tests: manageable capital needs even in the event of a severe stress

Within the framework of the Financial Stability Report, we conduct a comprehensive stress testing exercise every six months, the aim of which is to quantify the impact of a severe but still plausible stress scenario on the liquidity and capital position of the Hungarian banking sector. Due to the economic effects of the coronavirus epidemic, at the time of writing this publication, the economy is clearly in a high-risk environment, the future development of which involves a high degree of uncertainty. This uncertainty can also be captured in the extremely high standard deviation of growth forecasts. In light of this, as an exception, for the solvency stress test in this issue we estimated the effects of two different stress scenarios.

Based on the liquidity stress test, the systemic liquidity position improved somewhat in the second half of 2019, and the majority of the banking sector had a sufficient liquidity buffer at the end of 2019 to meet the regulatory requirements even in the event of severe combined liquidity shocks. The Liquidity Stress Index for the end of 2019 does not indicate significant risks to financial stability.

In the solvency stress test, in which we examined the effects of two stress scenarios, we included the effects of the payment moratorium and took into account the higher credit risk of significantly affected sectors. In the severe downturns assumed in the stress scenarios, the banking sector's two-year earnings before loan losses would be reduced by at least one-half compared to the earnings forecasted before the outbreak of Covid-19, which would be accompanied by substantial loan loss provisioning needs. With this, in the more severe stress scenario three-fourths of the banking groups would suffer pre-tax losses during the examined period. By the end of the two-year time horizon, in the more severe stress scenario, the capital adequacy ratio would fall below 8 per cent for nine per cent of the credit institutions sector. To meet all the capital requirements effective at the time of writing the report, a capital injection need of HUF 106 billion would arise at the sectoral level. This amount of capital need is considered manageable from a financial stability perspective.

8.1 Strong systemic liquidity stress resilience at the end of 2019

The liquidity stress test presumes the simultaneous occurrence of major bank liquidity risks and takes into account short-term adjustment in response to that, as well as 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, when determining the outcome of the stress test, banks' short-term adjustment opportunities as well as the contagion effects of these adjustment channels and of interbank market non-performance are also considered (Table 7).²⁷

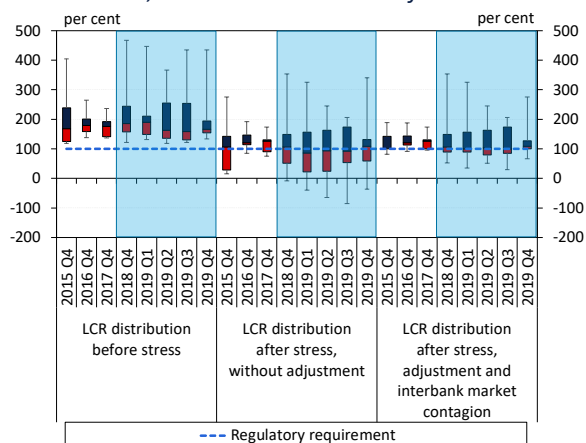
Table 7: Main parameters of the liquidity stress test

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

Source: MNB

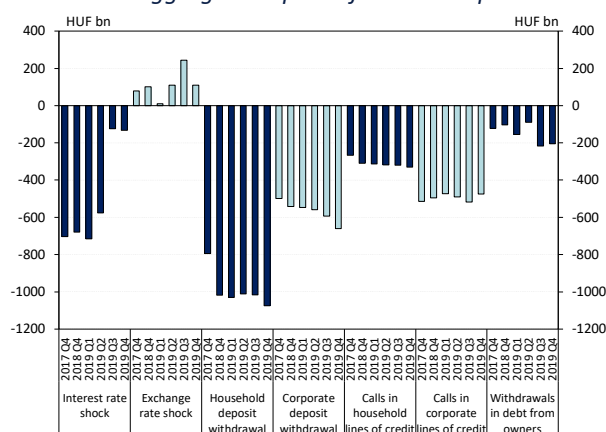
²⁷ For a detailed description of the methodology, see Box 9 of the May 2016 Financial Stability Report. In terms of its objective, logic and applied assumptions, our stress test is fundamentally different from the liquidity stress test used in the supervisory review of the Internal Liquidity Adequacy Assessment Process (ILAAP). Therefore, our findings cannot be directly compared to that.

Chart 80: Distribution of the LCR before and after stress, based on the number of banks



Note: The edges of the box of the box plot represent the lower and upper quartiles of the distribution; the horizontal line in it represents its median. The lower whisker of the plot shows the tenth, while the upper the ninetieth percentile. The periods for which the stress test is performed on an expanded institutional base are marked with a blue background. Source: MNB

Chart 81: Aggregate impact of stress components



Note: 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

Based on the outcome of the stress test, overall, the resilience of the sector improved in the second half of 2019, and at the end of 2019 the majority of the banking sector would comply with the regulatory requirements even after a severe liquidity stress. In the second half of 2019, the median of the pre-stress LCR indicators rose slightly and the lower quartile increased substantially compared to its end-June value (Chart 80). In line with this, in the case of our hypothetical stress scenario not allowing for adjustment, the lower quartile of the distribution of LCR indicators representing the most risky part of the credit institutions sector, has improved substantially. And the median passing above the 100-per cent regulatory requirement shows that more than half of the institutions would meet the regulatory requirement even without adjustment possibilities after stress. Taking into account the adjustment possibilities, the lower quartile of the distribution reaches 100 per cent by the end of 2019, and thus the majority of the banking sector had sufficient liquidity buffers at the end of 2019 to meet regulatory requirements even in the event of severe combined liquidity shocks.

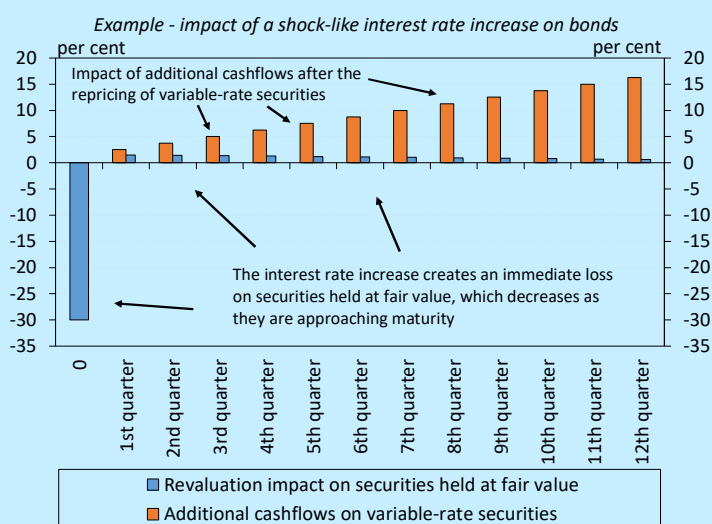
Of the individual risk sources, household deposit withdrawals are the one to which the banks' LCR indicators are most sensitive. In calculating the impact of the yield curve shock, we switched to our new contract-level interest rate risk model, which seeks to take exact account of all interest-sensitive items in banks' balance sheets (Box 10). As a result of this model change, the significance of the interest rate shock showed a relative decrease compared to the other items (Chart 81). Consequently, among the stress components, the largest LCR-deteriorating effect would clearly come from a shock-like withdrawal of household deposits. An exchange rate depreciation affecting the exchange rate-sensitive derivatives portfolio of the banking sector would continue to improve the liquidity position of banks due to the dominance of positions against the forint. The effects of shocks due to corporate deposit withdrawal and withdrawal of owners' funds increased moderately during the half-year under review.

BOX 10: METHODOLOGICAL BACKGROUND OF THE INTEREST RATE RISK CALCULATIONS

Changes in interest rates impact banks' earnings and capital adequacy through several channels. On the one hand, a fundamental feature of the banking operation is maturity transformation, i.e. the long-term placement of short-term funds. For this reason, the so-called repricing risk is inherent in banks' operation, i.e. the risk that when interest rates change, the cost of their faster-repricing interest-bearing funds (e.g. their deposits) will increase sooner than the income from their slower-repricing assets (e.g. loans). In addition, exposures repriced at different times make institutions sensitive not only to a parallel shift in the yield curve, but also to changes in its shape. Risk arises also from the shift of the various yield curves relative to each other, as well as from the 'option' characteristics inherent in certain contracts (e.g. a larger-volume withdrawal of demand deposits in the event of an interest rate increase). Therefore, in addition

to credit risk, interest rate risk is usually considered to be the second most important source of risk for commercial banks.

For all these reasons, the precise modelling of interest rate risk is of paramount importance in the context of the central bank's macroprudential analyses as well. To this end, we have developed a new tool in which we aimed at quantifying interest rate risk across all interest-sensitive items in banks' balance sheets at the contract level, providing us with the opportunity to examine the impact mechanisms in detail. Our model can be used to determine the effect of an immediate, arbitrary change in the interbank market forint yield curve on the interest rate-sensitive portfolio of the banking sector, not only immediately, but also at any future (e.g. two-year) time horizon.



According to our approach, the accounting classification of balance sheet items fundamentally determines the extent to which the change in the yield curve affects the individual profit and loss components, and its time course. For example, if a bond is held at amortised cost in a bank's books, i.e. the bank has undertaken to hold the bond until maturity from an accounting perspective, the change in bond value due to a shift in the yield curve does not need to be recorded in the books. Thus, a change in interest rates can only change the income from the bond, and that only in case the bond is a variable-rate security. In this case, the interest rate of the bond changes at the first interest rate modification date after the interest

rate shock. However, if the bond is held by the bank at fair value, the yield curve shock also leads to an immediate revaluation of the bond through changes in discount factors. The profit and capital impact of this revaluation depends on the accounting classification of the given balance sheet item: depending on this, the effect may be recorded in net interest income, in net trading income, or it may even directly modify the bank's capital.

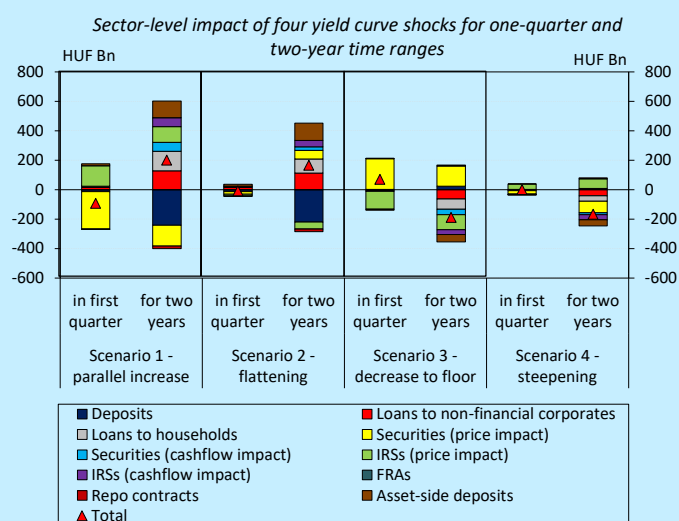
Therefore, the effect of the shock on items held at amortised cost results from the extent to which the estimated cash flows of these items for the next two years are driven by the shock. There may be significant differences between the asset and liability items. Cash flows in the case of corporate and household loan portfolios were quantified on contract-level data, in a way that the shock of the yield curve fully spills over to loan rates at the interest rate modification date (however, the credit risk-increasing effect of the interest rate shock was not taken into account). At the same time, in the case of deposits, full spillover of the interest rate shock is only realistic for term deposits, while for demand deposits a much lower spillover is observable. The interest rate sensitivity of demand deposits to the central bank base rate depends on a number of macroeconomic characteristics and banks' individual features, such as alternative investment options or the systemic and individual liquidity position, and may therefore change significantly over time, as is also evidenced by historical data. In the current framework, we assumed that the change in demand deposit rates is proportional to the percentage change in shocked interbank rates, i.e. it is 20 per cent of it. Thus, since in the case of an interest rate increase demand deposit rates become relatively lower than term deposit rates, we assume that 5 per cent of retail demand deposits and 10 per cent of corporate demand deposits flow into one-year term deposits (and in the case of an interest rate decrease the demand deposit portfolio increases accordingly). Our results are sensitive to these behavioural parameters assumed for the deposit portfolio.

In addition to loans and deposits, we quantified the impact of the yield curve shock on banks' interest rate swaps (IRs), forward rate agreements (FRAs), securities held at fair value and amortised cost, asset-side (central bank and interbank) deposits and repos, using contract-level data with the exception of deposits. For items measured at fair value, the immediate effect of revaluation was determined as the difference between the contract values calculated with the original and the shocked yield curve. It is important to point out that, although an immediate shift of the yield

curve has an immediate effect on the value of securities held at fair value, if we are also interested in the revaluation effect not only at the time of the shock but also over a longer period of time, we have to take into account that the extent of the effect lessens over time. For example, if the yield curve rises, the revaluation of a fixed-rate bond maturing in two years will generate an immediate loss. However, if the bond is held to maturity by the bank (and the yield curve no longer changes), the value of the bond returns to its face value as it approaches maturity, and the resulting increase in value also depends on the extent of the yield curve shock (i.e. on the initial revaluation).

In order to be able to assess not only the immediate impact of the interest rate shock but also that for the next two years, we need to make assumptions about the new contracts that will be originated in each portfolio of the balance sheet over the two-year horizon. According to our assumption (similarly to that used in the macroprudential solvency stress test), the volume of new lending corresponds to that of our aggregate loan forecast and its structure corresponds to the structure of loans disbursed over the past year. The deposit portfolio also develops according to the aggregate loan forecast in the model (assuming a constant loan-to-deposit ratio), and the structure of the new portfolio is the same as that of the initial deposit portfolio. The forecast of repo turnover, both in terms of volume and composition, was based on the interbank repo turnover in 2019 and the forecast of ÁKK's reverse-side repo market activity. In the case of securities, derivatives and asset-side deposits, we assumed the renewal of maturing contracts at interest rates changing according to the shock, but otherwise with the same characteristics as the original contracts.

As we are examining the change in the forint yield curve, with regard to balance sheet items denominated in foreign currency, we assumed that the foreign currency yield curves used for their discounting and interest rate changes remain unchanged. In addition, we assumed for foreign exchange rates that they remain at their level at the reference date. As a result, in our model a shift in the forint yield curve will not change the value of the balance sheet items denominated in foreign currency.

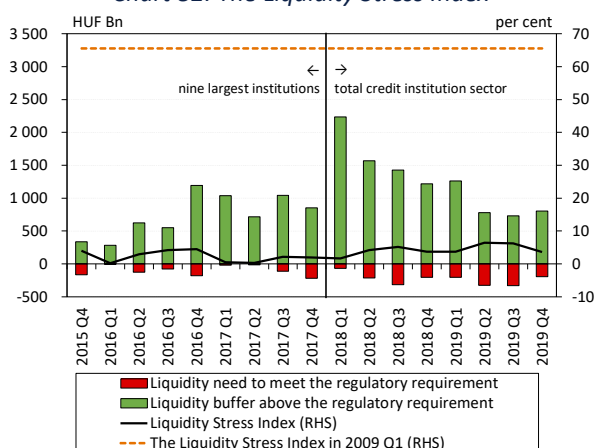


We present our results for four scenarios, for the portfolio of the banking sector at the end of 2019.

In the *first scenario*, the yield curve rises in parallel by 250 basis points. In the *second scenario*, which features an increase of 280 basis points at the short end and a decrease of 100 basis points at the long end, the yield curve becomes flatter and even decreasing. The *third scenario* examines a decrease in the yield curve to its floor of -1 per cent at the short end and 0 per cent at the long end. Finally, in the *fourth scenario*, we assume the curve becomes steeper: it decreases by 100 basis points at the short end and increases by 140 basis points at the long end.

Our results show the effect of immediate yield curve changes according to the above scenarios, over one quarter and two years. The results for the first quarter are dominated by revaluation effects: as a result of a parallel 250-basis point rise in interest rates, for example, a substantial immediate loss is generated on the securities portfolio held at fair value, which is not fully offset at the banking sector level by the revaluation of the IRS portfolio. However, the resulting immediate loss will turn into a substantial gain over time. This is due partly to the moderately positive net effect on loan and deposit portfolios, and partly to the fact that the immediate, negative revaluation effect on portfolios held at fair value is mitigated when the items approach maturity, and that these portfolios also generate substantial profit resulting from the increased cash flows. Thus, should the first scenario occur, the effects of revaluation and cash flows in the first quarter would result in a total loss of HUF 94 billion at the banking sector level, which would turn into a profit of HUF 200 billion by the end of the second year after the shock. The time horizon for analysing the interest rate risk of banks' balance sheets is therefore of fundamental importance.

Chart 82: The Liquidity Stress Index

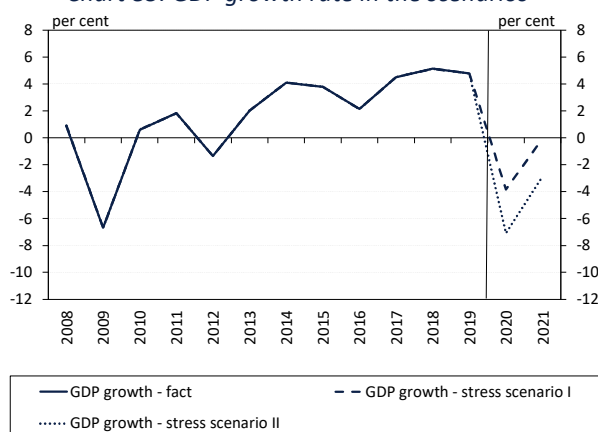


Note: The indicator is the sum of the liquidity shortfalls in percentage points (but maximum 100 percentage points) compared to the 100-per cent regulatory limit of the LCR, weighted by the balance sheet total in the stress scenario. The higher the value of the indicator, the greater the liquidity risk. The index value in 2009 Q1 is based on the liquidity shortfalls compared to the balance sheet coverage ratio. For the exact calculation method, see Banai et al. (2014): Stress testing at the Magyar Nemzeti Bank. MNB Occasional Papers No. 109. Source: MNB

According to the Liquidity Stress Index, in terms of liquidity, the banking sector had high shock-absorbing capacity when it was hit by the crisis following the onset of the pandemic in early 2020. The Liquidity Stress Index is designed to capture the heterogeneity across institutions and aggregates the post-stress percentage-point liquidity shortfalls compared to the regulatory limit calculated at the individual bank level by considering the size of the given bank. This also allows us to draw conclusions regarding the extent of a potential stress situation within the banking sector. The index declined during the half-year, and its value of 3.6 per cent calculated at the end of 2019 does not reflect any significant financial stability risks (Chart 82). The post-stress liquidity needs of the banking sector required to meet the regulatory requirement totalled HUF 194.9 billion in 2019 Q4, showing a substantial decrease. At the end of 2019, the aggregate post-stress liquidity surplus above the regulatory requirement remained virtually unchanged, at HUF 806.9 billion. Thus, according to the Liquidity Stress Index, in terms of liquidity, the banking sector was prepared for the crisis which started as a result of the pandemic in early 2020. At the end of 2019, the pre-stress liquidity surplus above the regulatory requirement amounted to approximately HUF 3,260 billion which – at the sectoral level – would almost completely cover the repayments lost as a result of the moratorium in 2020, even if the moratorium was fully utilised (Box 9). In addition, the shock-absorbing capacity of the banking sector was strengthened by the MNB's liquidity crisis management measures (see Chapter 7).

8.2 Systemic capital needs are manageable even in the event of a severe stress

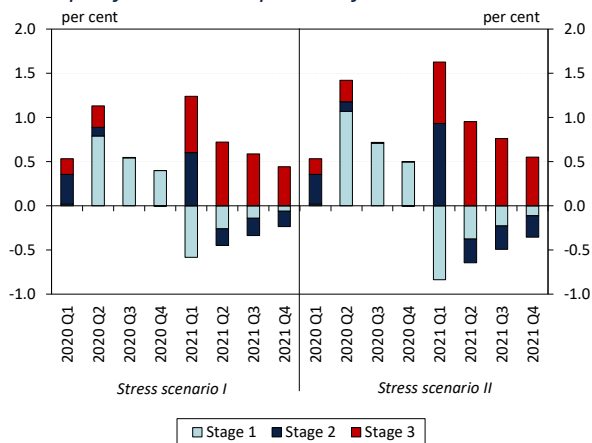
Chart 83: GDP growth rate in the scenarios



Note: Year-on-year growth rate of yearly GDP. Source: MNB

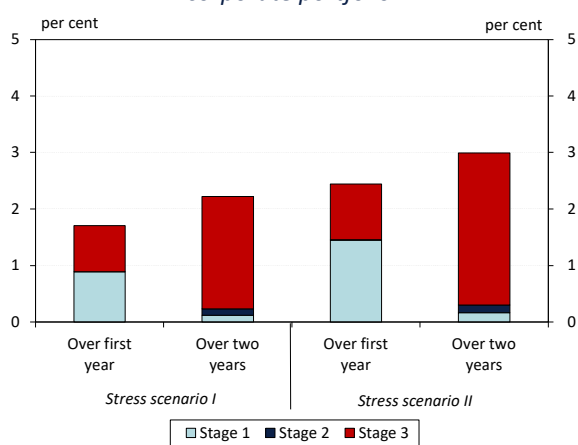
In the stress scenarios, we examined the impact on capital adequacy of an economic slowdown and tightening financial conditions evolving as a joint result of unfavourable shocks. As the extent and duration of the economic damage caused by the coronavirus pandemic starting in the first quarter of 2020 is surrounded by significant uncertainty, we identified two different stress scenarios in our stress testing exercise (Chart 83). In stress scenario number one, demand for Hungarian exports is more subdued, investment activity declines, production capacities are impaired, household consumption declines, which – overall – result in a temporary decline in output. At the same time, in stress scenario number two, we include a more substantial disruption of production capacities and a further decline in consumption, export and investment activity. In the second stress scenario, we also assumed a more permanent decline: in this

Chart 84: Loan loss provisioning for the household portfolio in each quarter of the scenarios



Note: Net generated loan loss provisions, grouped by end-of-quarter stages. In proportion to the gross book value of the household portfolio. Source: MNB

Chart 85: 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

scenario, Hungarian output decreases in both 2020 and 2021. Two-year cumulative economic growth is 11 per cent lower in the first scenario and 17 per cent lower in the second scenario, compared to the forecast from the December 2019 Inflation Report for the same period. The economic slowdown in both stress scenarios is accompanied by much tighter financial conditions (rising interest rates and a weakening exchange rate).

In our credit risk models,²⁸ we included the effects of the payment moratorium and took into account the higher credit risk of particularly vulnerable sectors. In our impairment calculations, we incorporated the effect of the payment moratorium from three aspects. On the one hand, we included the decrease in clients' repayment burden during the moratorium in the estimation of the probabilities of transitions between credit risk categories. On the other hand, although for contracts affected by the measure we did not allow switching between categories, and thus defaults during the moratorium, the effect of the increase in credit risk (which happens despite the repayment easing, due to the deterioration of the macroeconomic environment) was applied in the transition probabilities after the moratorium.²⁹ In the forecast of contracts' exposures, we also incorporated maturity extensions, which are due to the even repayment of interest accumulated during the moratorium from the beginning of 2021 onwards over the remaining maturity. In addition, in order to reflect the higher credit risk of the sectors considered to be particularly vulnerable to the pandemic, we made separate estimates for the transition probabilities of these sectors in the case of the corporate portfolio.³⁰

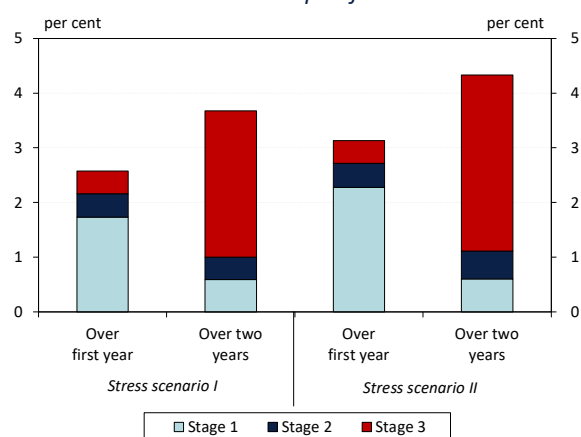
In the event of a substantial deterioration in the economic outlook, loan loss provisioning needs may increase significantly in the banking sector. Due to the forward-looking logic of the IFRS 9 accounting standard, when a shock materialises, expectations for the future are reassessed even if, due to the moratorium, contracts are temporarily unable to switch between credit risk categories or default. For this reason, upon the inclusion of the shock into expectations in 2020 Q2, a significant portion of the two-year additional loan loss provisioning need will be recognised. With the end

²⁸ A more detailed description of the logic of our credit risk model is included in Box 9 of the November 2018 Financial Stability Report.

²⁹ In the case of the corporate portfolio, however, we allowed contracts to become non-performing even during the moratorium, as the moratorium only makes it more difficult for companies but does not prevent them from becoming insolvent and thus technically non-performing on their loans.

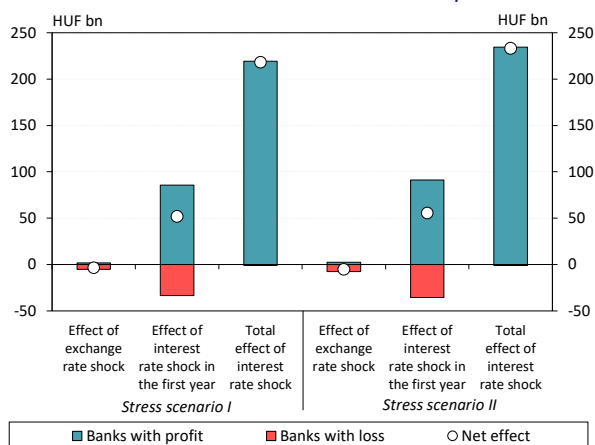
³⁰ In addition to the above, we also renewed our assumptions for new loan disbursements over the two-year horizon of our loan loss provisioning model: our current assumption is that, in each quarter of the time horizon of the stress test, in terms of their structure, loan disbursements typical in the last observed year recur, but their aggregate volume follows the loan forecasts discussed in Chapter 4.

Chart 86: Cumulated loan loss provision rate for the household portfolio



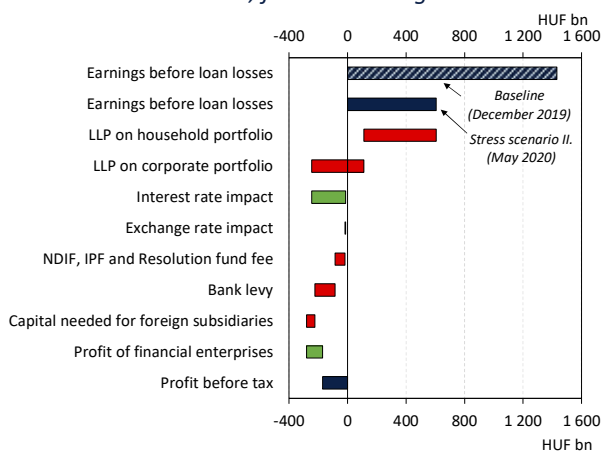
Note: Net generated loan loss provisions, cumulated from the start of the stress test, grouped by end-of-period stages. In proportion to the gross book value of the household portfolio. Source: MNB

Chart 87: Market risk stress test impacts



Source: MNB

Chart 88: Two-year development of certain items on the profit and loss statement in the more severe stress scenario, for the banking sector



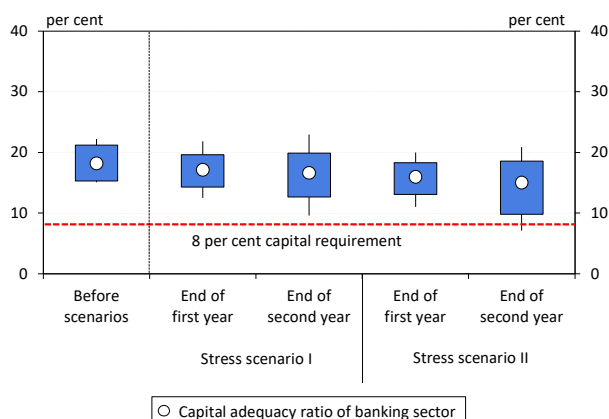
Note: Cumulated values over the two-year-long scenario. NDIF: National Deposit Insurance Fund, IPF: Investor Protection Fund. Source: MNB

of the moratorium, when it becomes possible for contracts to switch between categories again, further substantial loan loss provisioning needs will arise through the shift to worse provisioning categories (Chart 84). We estimate that significant loan loss provisioning needs will materialise in both stress scenarios. In the case of the second scenario, over the two years this would be as high as 3 per cent of the aggregate gross book value for the corporate portfolio (Chart 85) and 4.3 per cent for the household portfolio (Chart 86). Our model predicts that in the same stress scenario, the ratio of loans over 90 days past due to the gross loan portfolio would rise by the end of the second year to 5.9 per cent for the corporate portfolio of the banking sector and to 10.2 per cent for the household portfolio.

In both stress scenarios, the effect of market risks is dominated by the profit realised as a result of the applied yield curve shock. As the total open FX position of the banking sector remains virtually zero, a shock-like rise in foreign exchange rates does not have any material effect on banks' earnings. To quantify the impact of the yield curve shock, we switched in this report to our new interest rate risk model (Box 10), which assesses the impact of an immediate yield curve shock on the interest rate sensitive bank balance-sheet items at the contract level. With the help of the model, we can also determine the time course of the effect of the immediate interest rate shock. Based on this, whereas in the first year the net loss immediately realised on balance sheet items held at fair value (securities, derivatives) is dominant for many institutions, at the two-year time horizon net interest income turns positive for practically all institutions, both due to the net profit on the additional cash flows from loan and deposit portfolios and the reduction over time of the initial loss realised on portfolios held at fair value. At two years, the shock-like immediate parallel rise in the yield curve thus results in a profit of HUF 218.2 billion in the first stress scenario and HUF 233.3 billion in the second scenario, at the banking sector level (Chart 87).

In the second scenario, three-fourths of the banking groups would suffer pre-tax losses over the two-year time horizon. In the first stress scenario, earnings before loan losses accumulated over the two-year time horizon would fall to 55 per cent and in the second stress scenario to 42 per cent of the baseline scenario discussed in our December 2019 report. Thus, even considering earnings before loan losses in stress scenario number one accumulated over two years, some institutions would become loss-making, but in stress scenario number two, in terms of numbers, more than half of the banking groups would suffer losses. In

Chart 89: Distribution of the capital adequacy ratio based on the number of banks for the two stress scenarios



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

Table 8: Stress test results with different capital requirements

	Before scenarios	8-per cent capital requirement		All capital requirements*	
		Stress scenario I	Stress scenario II	Stress scenario I	Stress scenario II
Capital need of banks (HUF bn)	0.0	9.6	39.0	60.3	105.9
Average capital need of banks (percentage points)	0.0	0.6	1.1	1.6	2.0
Capital buffer of banks above requirement (HUF bn)	1 886.9	1 819.5	1 533.8	1 254.9	980.6
Average capital buffer of banks above requirement (percentage points)	10.2	11.2	10.7	8.5	10.6

Note: *Capital requirements effective at the time of the publication. Data for before the scenarios are 2019 Q4 figures, while data of the respective scenarios pertain to the end of the second year of the scenario. Source: MNB

addition, in the latter stress scenario, the combined additional loan loss provisioning needs for the household and corporate portfolios would generate a loss at the banking sector level, which would be raised to near-zero by the profit realised as the result of the interest rate shock. As a consequence of other items, *inter alia* the bank levy including the special epidemiological tax on credit institutions, the pre-tax profit at the sectoral level would total HUF -171 billion for the entire second stress scenario (Chart 88). In this stress scenario, considering the distribution of the loss between banks, all institutions would become loss-making before tax due to the loan loss provisioning needs arising in the quarter in which the stress is included in the expectations, and cumulatively, in terms of number, about three-fourths of the credit institution sector would realise losses in two years.

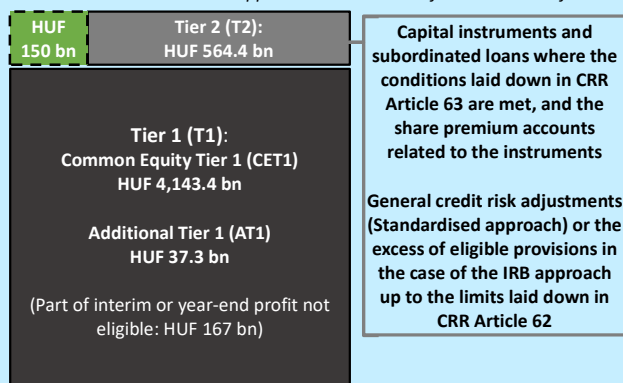
If our stress scenarios occurred, by the end of the two-year time horizon a capital injection need would arise which is manageable from a financial stability perspective. At the end of 2019, the capital adequacy ratio of the banking sector was 18.2 per cent, which reflects strong capitalisation. In the stress scenarios, the average capital adequacy of the sector would deteriorate substantially, i.e. in the first scenario it would fall short by 1.6 percentage points and in the second scenario by 3.2 percentage points of the end-of-2019 value (Chart 89). However, the lower values of the distributions capturing a more risky institutional scope merit particular attention: by the end of the two years in the scenarios, in scenario number one the tenth percentile of the distribution, while in scenario number two even the lower quartile would be below 10 per cent. In the latter scenario, for ten per cent of credit institutions the capital adequacy ratio calculated for the end of the second year would not even reach 8 per cent. By weighting banking groups with their risk-weighted assets (RWA) for the end of the second year, in the first and second stress scenarios, 7.4 per cent and 8.9 per cent of the banking sector would fall below the Pillar 1 8-per cent threshold of the total capital adequacy ratio, respectively. Compared to the 8-per cent requirement, during the two-year stress scenarios, capital injection needs of HUF 9 and 39 billion would arise, while taking into account all the capital requirements in effect at the time of the publication of the report, these capital needs would amount to HUF 60 billion and HUF 106 billion in the first and the second scenarios, respectively (Table 8). The impact of the capital needs arising at individual institutions may be mitigated by the precautionary capital programme of the Hungarian government (Box 11).

BOX 11: THE HUNGARIAN STATE CAN PROVIDE SUPPORT TO THE CREDIT INSTITUTION SECTOR BY PURCHASING TIER 2 ITEMS, IF NECESSARY

On 7 May, the government issued a decree allowing the state to support banks' stability and lending capacity by purchasing eligible bank bonds, if required. The legisla-

tion established the legal framework for bond purchases, but actual bank bond issues can only take place under strict conditions. As we pointed out in previous chapters of the report, the Hungarian banking system has a substantial capital buffer at the sector level. This is confirmed by our stress test results as well, according to which even in the event of a severe, prolonged economic downturn, a manageable capital replenishment would be sufficient in the sector. In light of this, the government's action should be viewed as a precautionary step to address potentially arising individual problems rather than to mitigate capital problems at the sector level. In assessing the banks' applications, the opinion of the Governor of MNB is also taken into account.

The maximum available support in the structure of end-2019 own funds



Source: MNB

The amount that can be requested by individual banks is limited by several rules. According to the legislation, the maximum maturity of the bonds that can be purchased by the state is 7 years, and the maximum amount is HUF 150 billion. The total value of bonds purchased by the state may not exceed HUF 50 billion per bank, on the one hand, and on the other hand

- the capital shortfalls as revealed by a stress test, asset quality review or other equivalent procedure performed in accordance with the manner specified in detail by the legislation, and
- the sum of 25 per cent of the minimum capital requirement established along the stress scenario in a stress test or asset quality review and the additional capital requirement determined via the supervisory review.³¹

Application of the temporary support, which is to be replaced within not more than 7 years, is subject to strict rules.

The credit institution must be solvent and this condition must be maintained for at least the next 12 months. In addition, a credit institution is only eligible for the support if the legal conditions for the write-off or conversion of capital items do not apply. To be eligible, the credit institution must demonstrate with a capital raising plan that it has taken all reasonable measures to minimise the capital shortfall, and it also cannot use the support to finance losses that originated or were expected in the past. The programme also imposes strict conditions on the credit institution's remuneration policy as well, which, just as the high interest rate, promotes the use of the programme only by institutions that really need additional capital. We estimate the bank bond interest rate to be around 410 basis points, composed of the following elements:

- the average of the last 20 days of the 5-year reference yield set by the ECB,
- the average difference between said yield and the 5-year reference yield published by the Government Debt Management Agency (ÁKK) between the beginning of 2019 and the end of January 2020,
- the amount of the median 5-year CDS spread of credit institutions of the European Union with an "A" credit rating, and
- a "spread" of 200 basis points.

³¹ Use of the programme may also be implicitly restricted by the fact that the distribution of banks' capital structure according to the different quality of capital instruments is also subject to strict rules, and thus individual institutions can only benefit from the programme if they have a sufficient amount of CET1/T1 capital.

Methodological annex to the calculation of vulnerable outstanding loans

Vulnerable corporate loans

In the case of corporate loans, the vulnerability categories were based on the classification of companies' activities. Information on the activities was obtained from the Hungarian National Tax and Customs Administration's (NAV) database which is created from tax returns. This database was associated with the outstanding principal reported by lending institutions to the Central Credit Information System (CCIS). Companies' activities were categorised in line with the sub-sectoral classification of their main activity as determined by the HCSO in the Hungarian NACE Rev. 2 (TEÁOR'08) and indicated on the latest tax return with a reference period of no later than 2018. The outstanding principal comprises information with a reference date of end-2019, adjusted based on general rules.

The resulting connected database's information coverage is 94 per cent, in the sense that of the loans outstanding reported to the MNB by credit institutions in monetary statistics, 94 per cent are covered by the micro-level database's relevant loans that can be associated with an activity classification. In the examination, the results were prorated with the coverage ratio in a sectoral breakdown, typically between 80–100 per cent, to improve the accuracy of the analysis.

Based on expert judgement, the four-digit TEÁOR codes were classified into three vulnerability categories by subsectors:

- *Directly vulnerable activities*: the subsectors (NACE Rev. 2 Classes) that were immediately affected on account of the pandemic and the measures, shutdowns, restrictions and isolation efforts introduced to combat its spread.
- *Indirectly vulnerable activities*: the subsectors that were affected by the second-round effects of the anti-epidemic measures, namely the decline in aggregate demand.
- *Non-vulnerable activities*: the subsectors that can potentially be affected in a prolonged crisis but were nonetheless unaffected at the time of the analysis.

Accordingly, of the 615 subsectors, 104 were deemed vulnerable, of which 64 were classified into the directly vulnerable category and 40 into the indirectly vulnerable group. In the analysis detailed in Chapter 4, the total outstanding principal was referred to as vulnerable in the case of the debtors who are directly or indirectly vulnerable based on their main activity (TEÁOR code). For more information on the breakdown of the classification by national economy sectors (NACE Rev. 2 Groups), see Table 9.

Vulnerable household loans

In the case of household loans, the vulnerability categories were based on the profession of the debtors. Profession information was provided to the MNB by the Hungarian State Treasury's Central Administration of National Pension Insurance (ONYF) in anonymised form. A key was used to merge the data provided by the Central Credit Information System (CCIS) on the outstanding principal reported by financial intermediary institutions. In the case of the profession of the debtors, the latest data were for 2017; therefore, the end-2017 outstanding principal was merged with the debtors. Thus, the analysis reflects the situation at the end of 2017, due to the lack of more up-to-date information on the professions of the debtors.

The ONYF database contains all the professions of the debtors in all their jobs, more precisely the classification of the professions as determined by the HCSO in accordance with the Hungarian Standard Classification of Occupations (FEOR-08). Since people can have different FEOR classifications in different jobs, the FEOR code identified as a given debtor's profession was the one from which the debtor earned the most in 2017.

After identifying the professions, the FEOR codes were linked to two-digit (corporate) TEÁOR codes. This was based on the TEÁOR codes of the jobs where most workers with a given FEOR code worked according to the Labour Force Survey.

Albeit with deviations in unique cases, the professions were classified into three vulnerability categories primarily based on the corporate vulnerability of two-digit TEÁOR codes:

- *Directly vulnerable professions:* the professions that were almost immediately affected on account of the pandemic and the measures, shutdowns, restrictions and isolation efforts introduced to combat its spread.
- *Indirectly vulnerable professions:* the professions that were affected by the second-round effects of the containment measures, namely the decline in aggregate demand.
- *Non-vulnerable professions:* the professions that can potentially be affected in a prolonged crisis but are nonetheless currently unaffected.

Accordingly, of the 485 professions, 59 were classified into the directly vulnerable category and 107 into the indirectly vulnerable group. For the distribution of the profession classifications by economic sectors, see Table 10.

Below, the outstanding principal was referred to as vulnerable in the case of the debtors who are directly or indirectly vulnerable based on their profession (FEOR code).

The analysis presented in Chapter 4 did not take into account co-debtors. However, if more than one debtor was linked to a loan, the liability was included in the calculations as many times as there were debtors associated with it. This also means that loans with joint debtors were overweighted. These liabilities are taken into account as (directly or indirectly) vulnerable as many times as there are debtors with (directly or indirectly) vulnerable professions linked to them, and as non-vulnerable as many times as there are non-vulnerable debtors linked to them.³²

The estimation was also performed with two other assumptions. The low estimate assumed that if a debt was associated with at least one non-vulnerable debtor, the loan was non-vulnerable. The high estimate, on the other hand, assumed that if there was at least one (directly or indirectly) vulnerable debtor, the loan was (directly or indirectly) vulnerable (and if there was a directly vulnerable debtor among the debtors, the loan was also directly vulnerable).

Based on our main estimate taking into account all debtors, 33 per cent of the debtors (30 per cent of mortgage credit debt and 34 per cent of consumer credit debt) are vulnerable, which is confirmed by the low and high estimates. The three methods only produce slightly different results for the share of vulnerable mortgage credit: the estimate taking into account all debtors gives 30 per cent, the low estimate yields 27 per cent, while the high estimate shows 34 per cent (Table 11).

Table 9: Distribution of vulnerable subsectors and corporate sector debtors in the national economy sectors

Economic sector	Sub-sectors (pcs)	Directly vulnerable sub-sectors (pcs)	Indirectly vulnerable sub-sectors (pcs)	Share of directly vulnerable corporate debtors (per cent)	Share of indirectly vulnerable corporate debtors (per cent)
Administrative	33	8	0	23	0
Mining	15	0	0	0	0
Other services	23	12	0	82	0
Construction	22	0	15	0	87
Manufacturing	230	0	17	0	22
Information, communication	26	0	0	0	0
Real estate*	4	0	4	0	55%*
Trade, repair of motor vehicles	91	21	0	28	0
Public administration, education, social services	32	0	0	0	0
Agriculture	39	0	0	0	0
Art, entertainment, leisure	15	7	0	71	0
Financial and insurance activities	18	0	0	0	0
Science, engineering, professional activities	19	0	0	0	0
Transport, storage	23	8	4	76	18
Tourism, catering	8	8	0	100	0
Electricity	8	0	0	0	0
Water, sewage, waste management	9	0	0	0	0
Total	615	64	40	18	21

³² Furthermore, on Chart 48 in the analysis presented in Chapter 4, some sectors were merged for clarity.

Note: Based on credit institution sector data. In the real estate transactions* sector, our vulnerability classification based on TEÁOR'08 did not appropriately segment outstanding borrowing, therefore the MNB's loan-purpose ratio generated from aggregate data reporting was also used. This is shown in the last column of the table.

Table 10: Distribution of vulnerable profession groups and household debtors by national economy sectors
(estimate taking all debtors into account)

Economic sector	Number of occupations (FEOR)	Number of directly vulnerable occupations (FEOR)	Number of indirectly vulnerable occupations (FEOR)	Share of directly vulnerable debtors (per cent)	Share of indirectly vulnerable debtors (per cent)
Administrative	14	7	0	27	0
Mining	7	0	0	0	0
Other services	16	11	0	87	0
Construction	27	0	24	0	83
Manufacturing	86	0	63	0	81
Information, communication	32	0	0	0	0
Real estate	3	0	3	0	100
Trade, repair of motor vehicles	38	0	13	0	16
Public administration, education, social services	116	2	0	4	0
Agriculture	25	0	0	0	0
Art, entertainment, leisure	26	20	0	94	0
Financial and insurance activities	10	0	0	0	0
Science, engineering, professional activities	32	0	0	0	0
Transport, storage	23	5	4	20	2
Tourism, catering	15	14	0	94	0
Electricity	10	0	0	0	0
Water, sewage, waste management	5	0	0	0	0
Total	485	59	107	9	25

Table 11: Results of the different estimation methods in the case of vulnerable household debtors and outstanding loans

	Debtors (per cent)	Mortgage loans outstanding (per cent)	Consumer loans outstanding (per cent)
Estimation based on all debtors			
Not vulnerable	66.6	70.2	66.4
Indirectly vulnerable	24.8	21.6	25.4
Directly vulnerable	8.6	8.2	8.2
Sum	100	100	100
Low estimate			
Not vulnerable	68.1	73.1	67.0
Indirectly vulnerable	23.8	19.7	24.9
Directly vulnerable	8.1	7.1	8.1
Sum	100	100	100
High estimate			
Not vulnerable	65.1	66.4	66.3
Indirectly vulnerable	25.6	23.6	25.3
Directly vulnerable	9.2	10.0	8.4
Total	100	100	100

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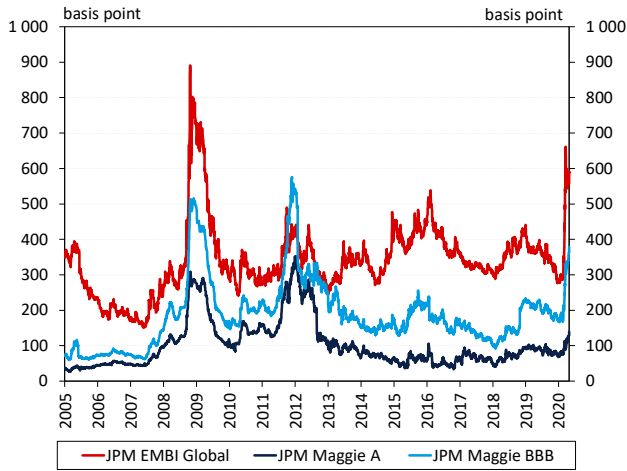
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Appendix: Macroprudential indicators

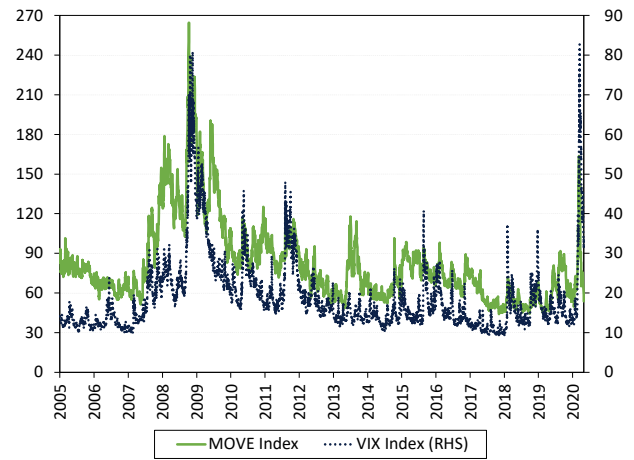
1. Risk appetite

Chart 1: Primary risk indicators



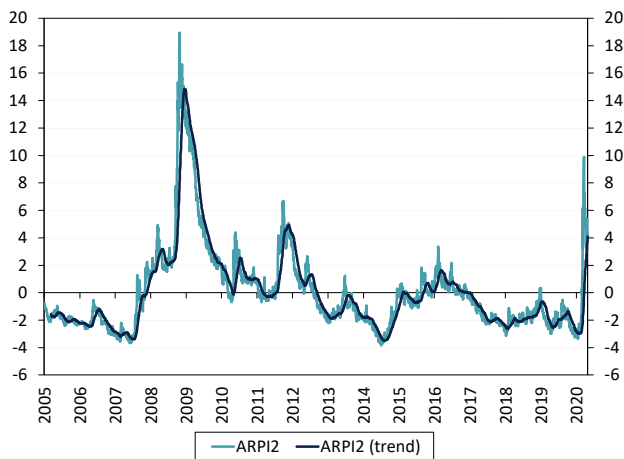
Source: Datastream, JP Morgan

Chart 2: Implied volatility of the primary markets



Source: Datastream, Bloomberg

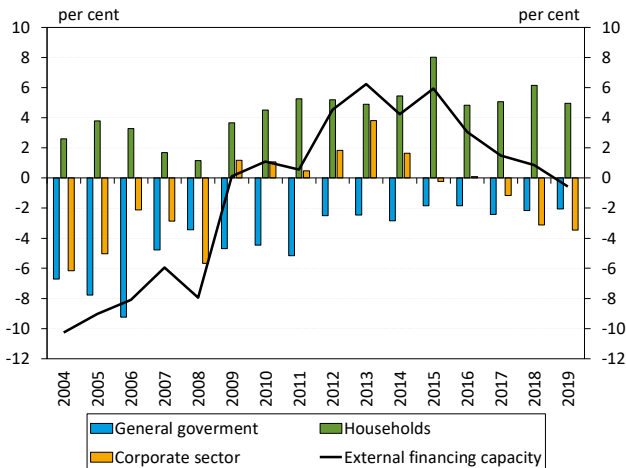
Chart 3: Dresdner Kleinwort indicator



Source: DrKW

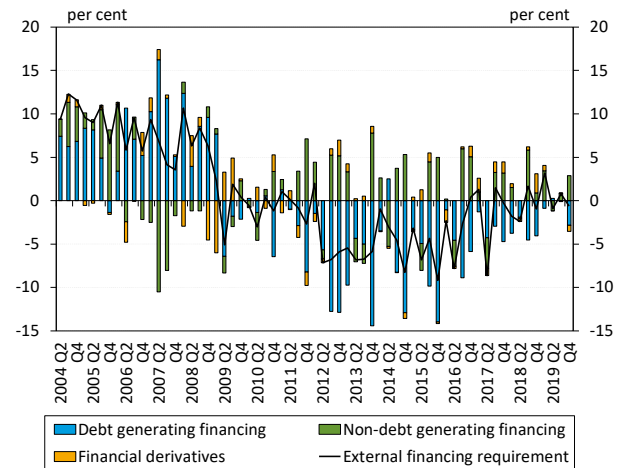
2. External balance and vulnerability

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



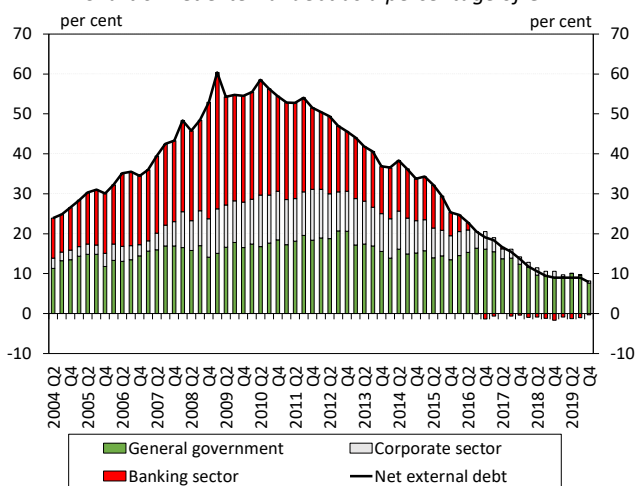
Source: MNB

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



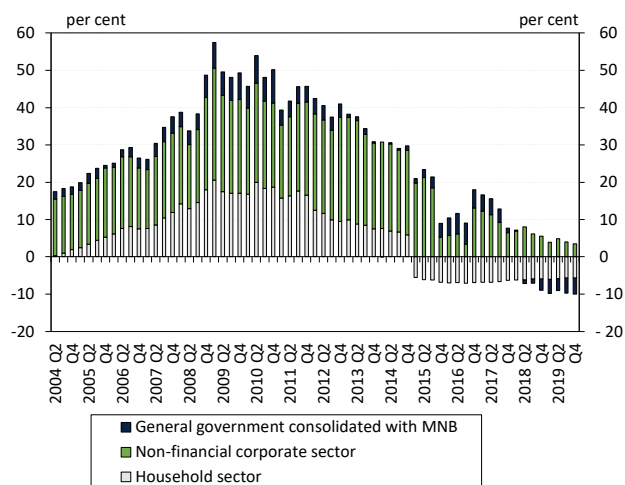
Source: MNB

Chart 6: Net external debt as a percentage of GDP



Source: MNB

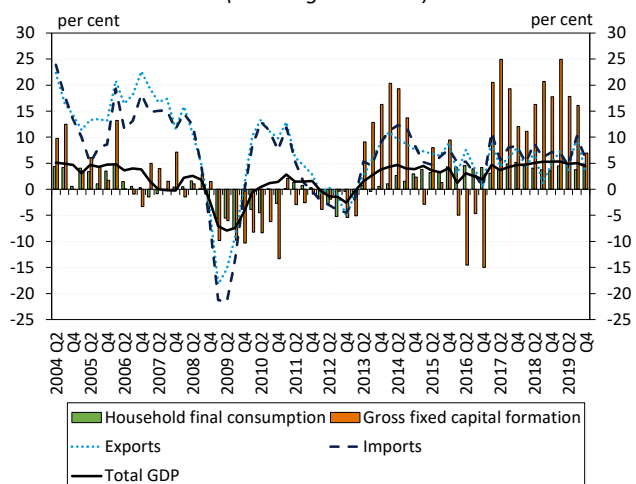
Chart 7: Open FX position of the main sectors in the balance sheet as a percentage of GDP



Source: MNB

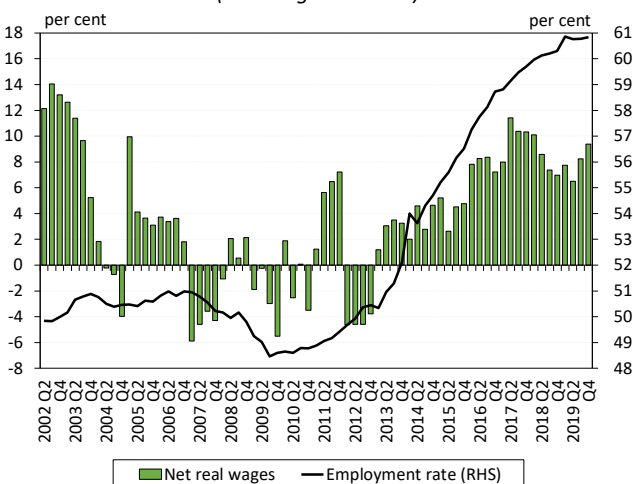
3. Macroeconomic performance

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



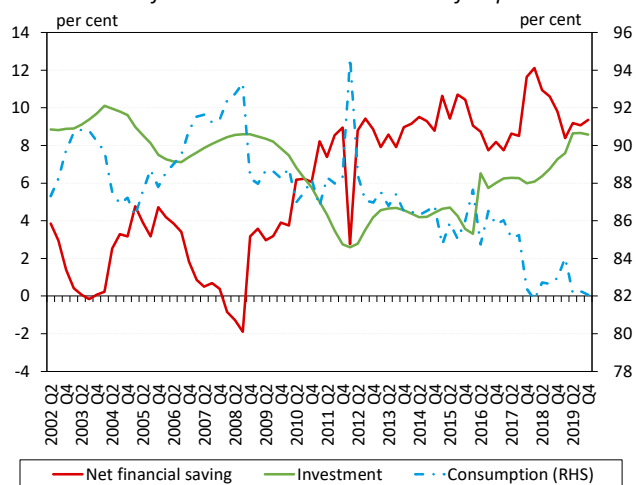
Source: HCSO

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



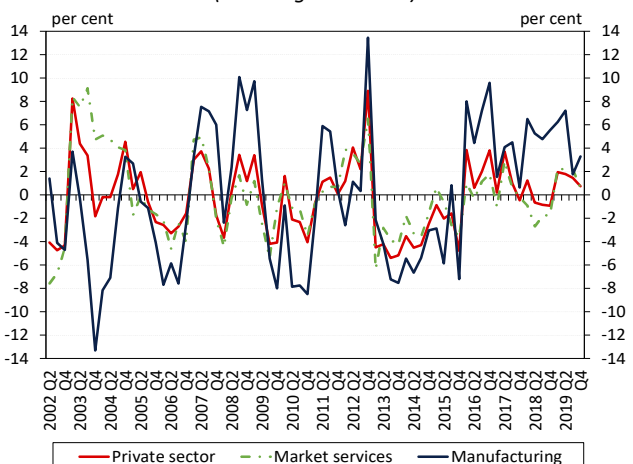
Source: HCSO

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



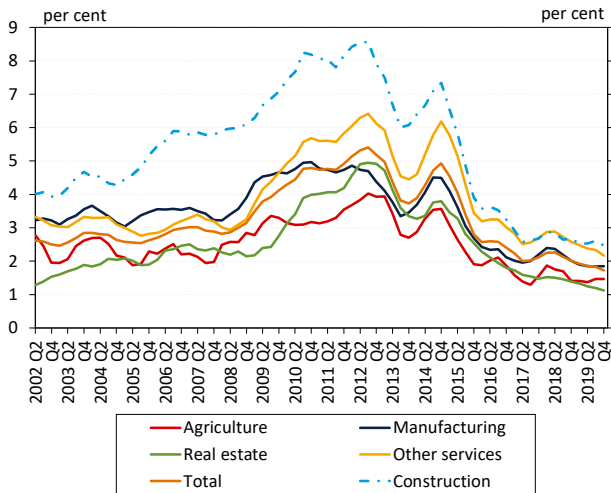
Source: HCSO, MNB

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



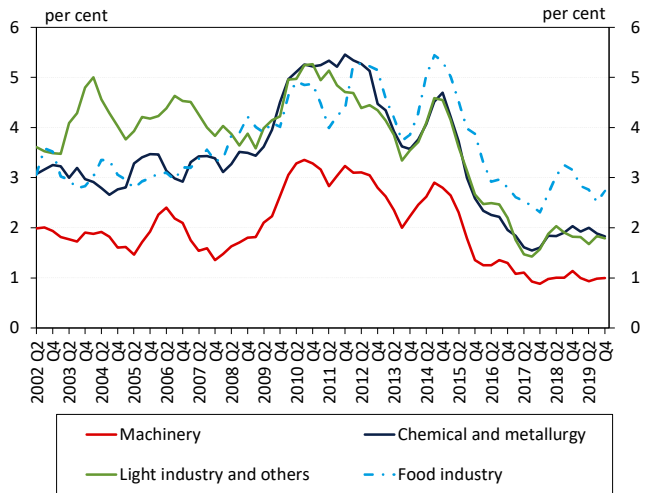
Source: HCSO, MNB

Chart 12: Sectoral bankruptcy rates



Source: Opten, MNB, HCSO

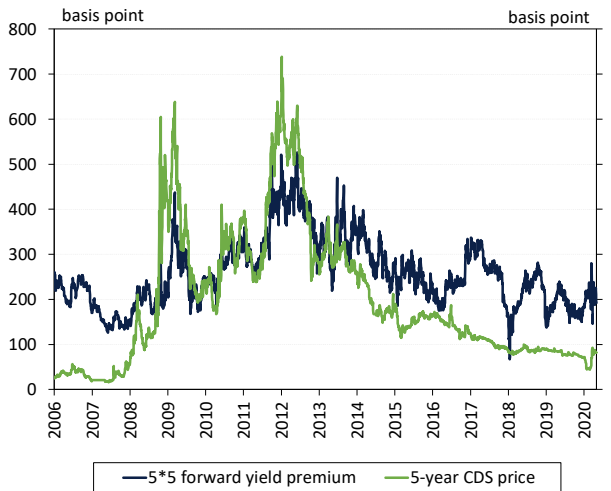
Chart 13: Bankruptcy rates for the subsets of manufacturing industry



Source: Opten, MNB, HCSO

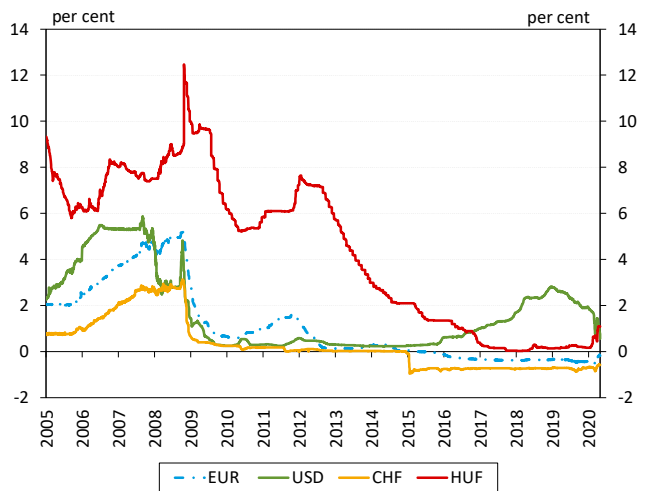
4. Monetary and financial conditions

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



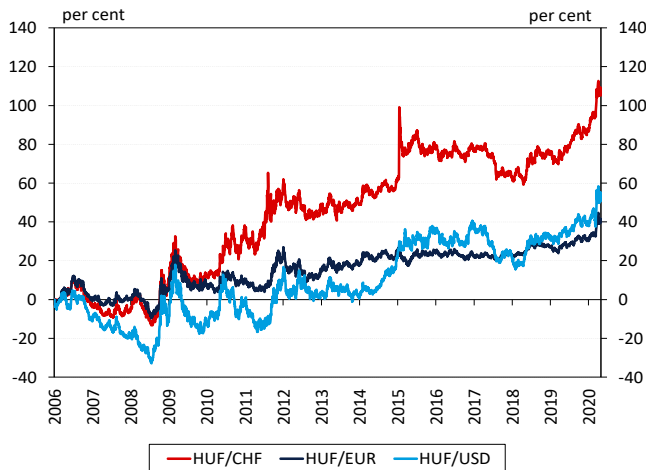
Source: Datastream, Reuters, Bloomberg

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



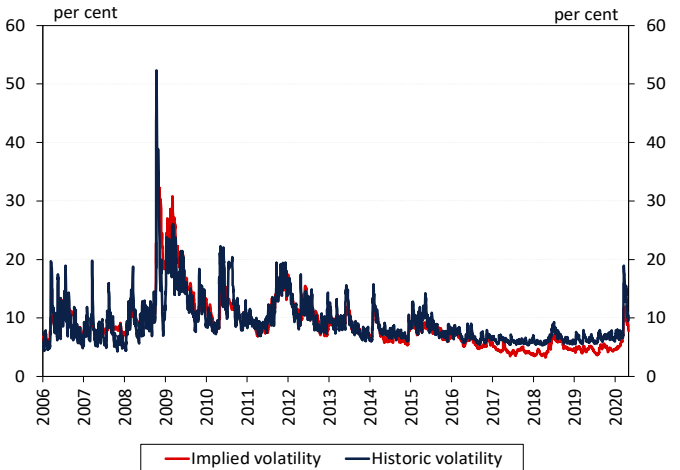
Source: Reuters

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



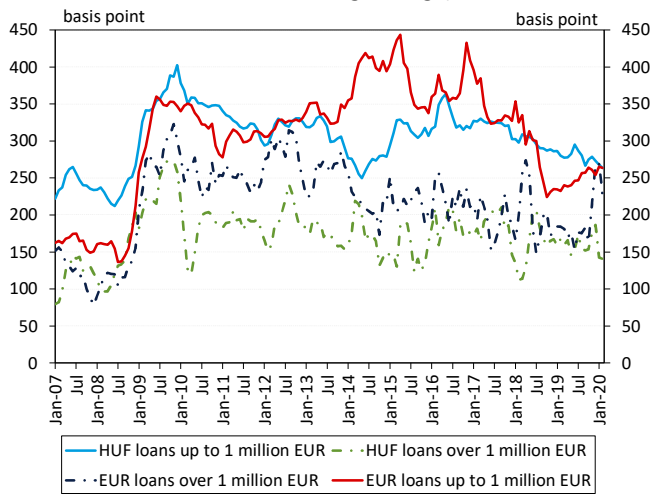
Source: Reuters

Chart 17: Volatility of the HUF/EUR exchange rate



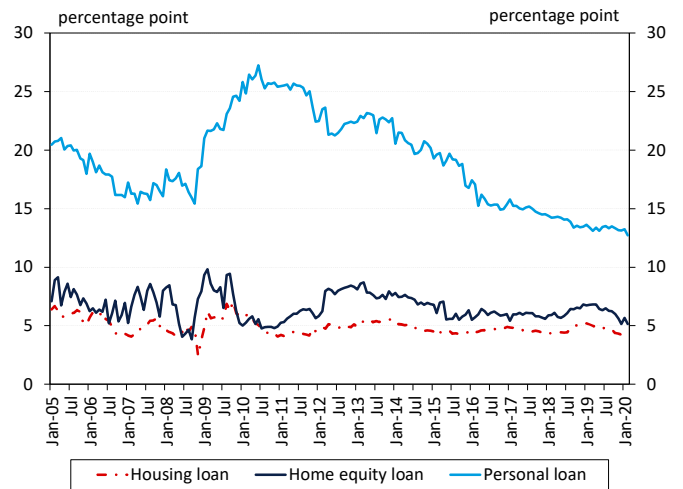
Source: MNB, Reuters

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



Source: MNB

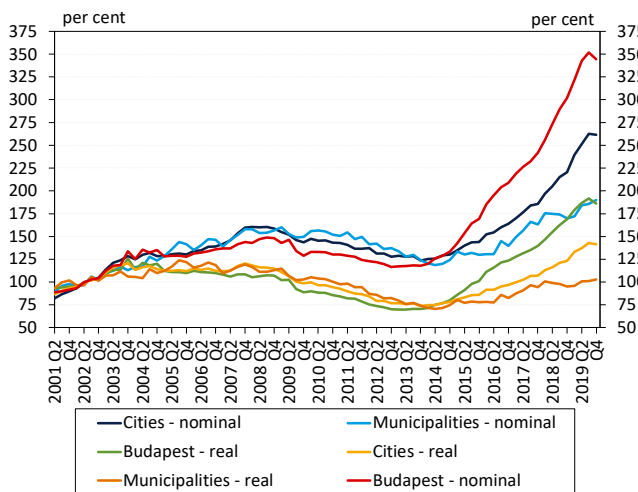
Chart 19: Interest rate premium of new HUF loans to households (over 3-month BUBOR)



Source: MNB

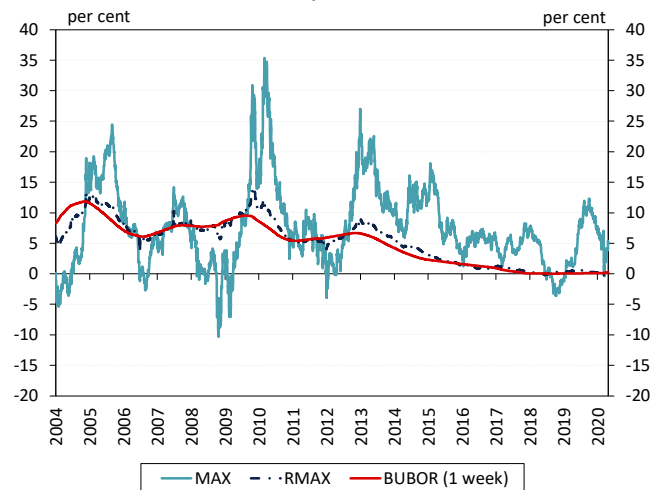
5. Asset prices

Chart 20: MNB house price index breakdown by settlement type



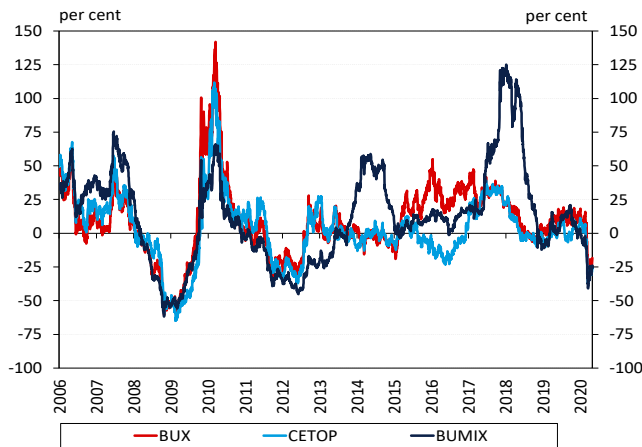
Source: MNB

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



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

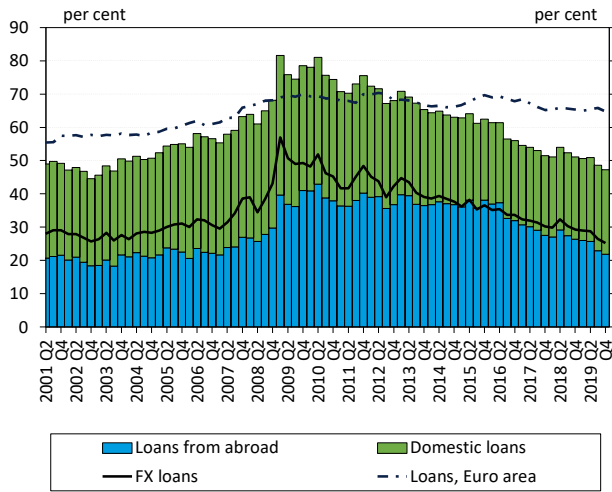
Chart 22: Annual yield of key Hungarian and Central and Eastern European stock market indices



Source: BSE, portfolio.hu

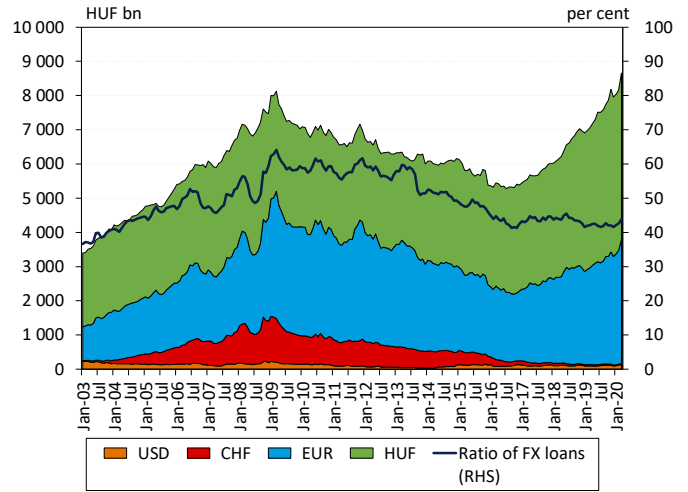
6. Risks of the financial intermediary system

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



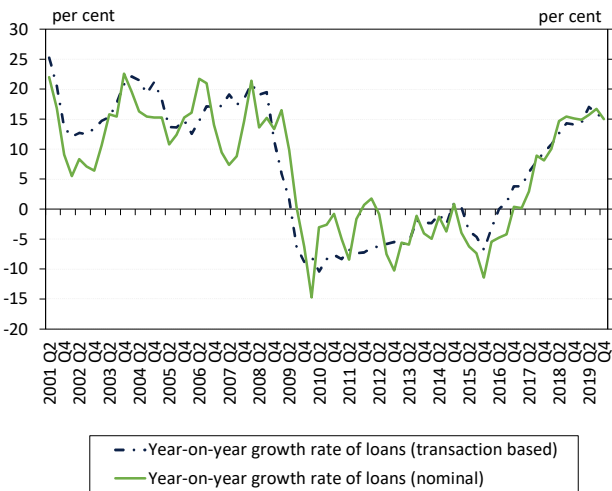
Source: MNB, ECB, Eurostat

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



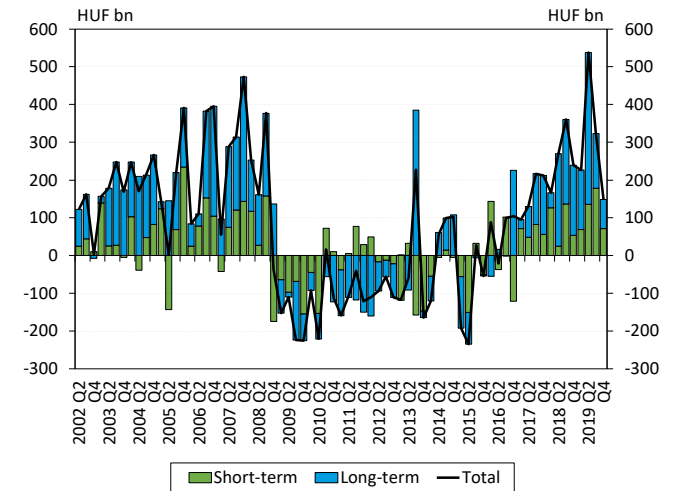
Source: MNB

Chart 25: Annual growth rate of loans provided to non-financial corporations by credit institutions



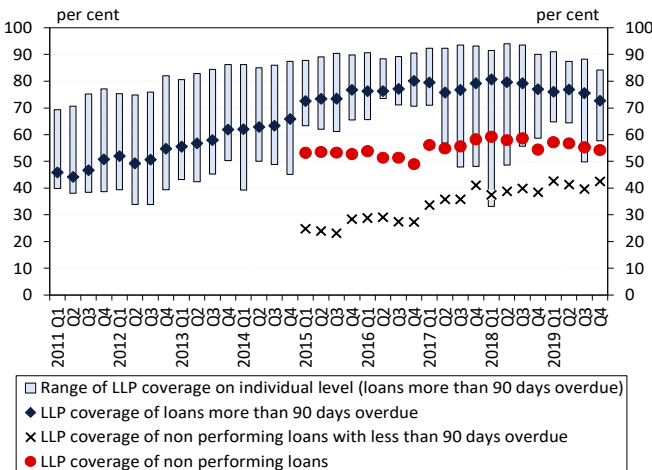
Source: MNB

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



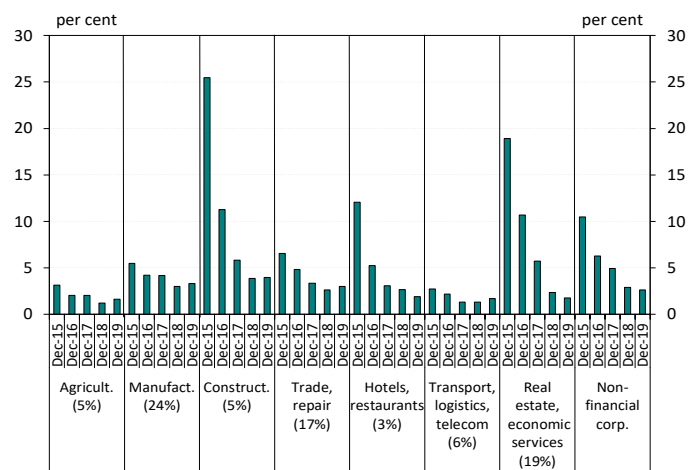
Source: MNB

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



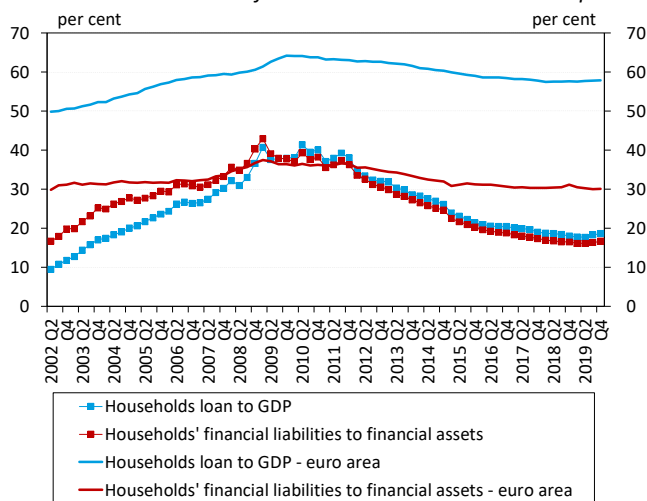
Source: MNB

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



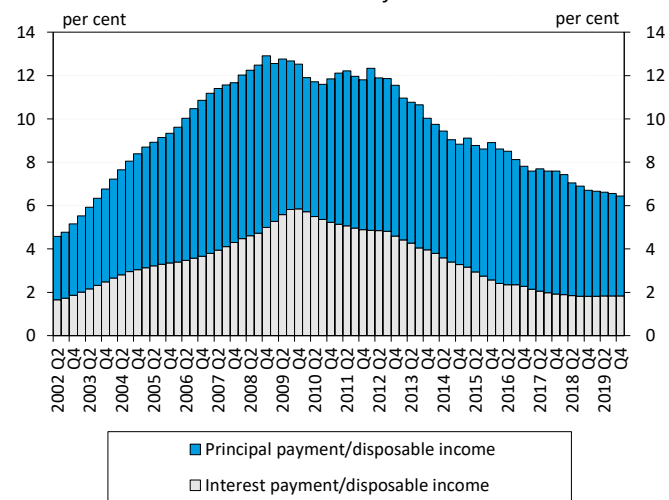
Source: MNB

Chart 29: Indebtedness of households in international comparison



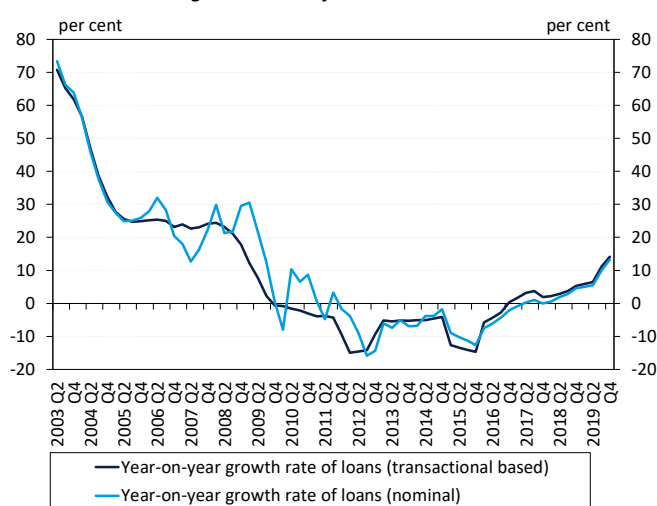
Source: MNB, ECB

Chart 30: Debt service burden of the household sector



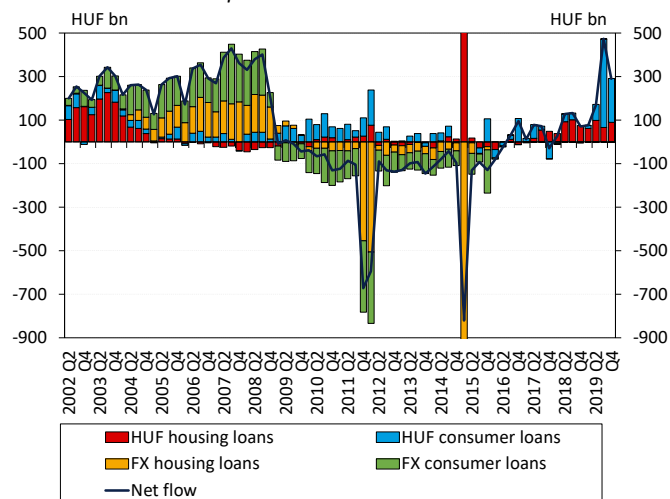
Source: MNB

Chart 31: Annual growth rate of total domestic household loans



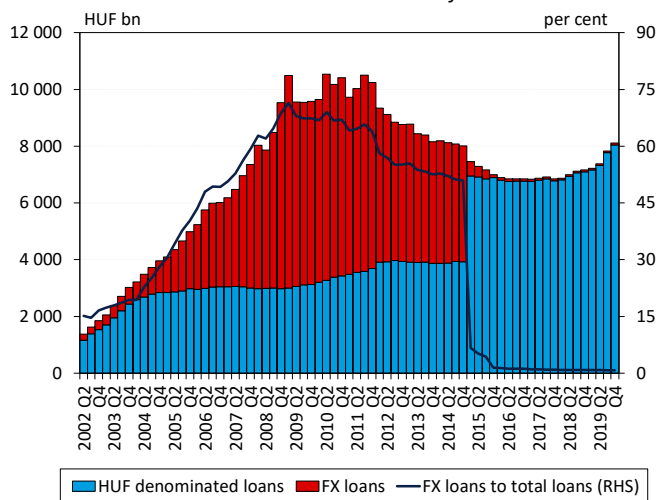
Source: MNB

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



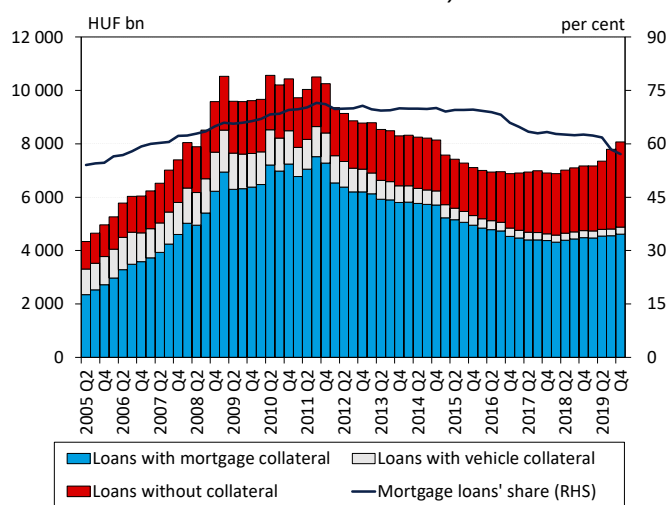
Source: MNB

Chart 33: The denomination structure of household loans



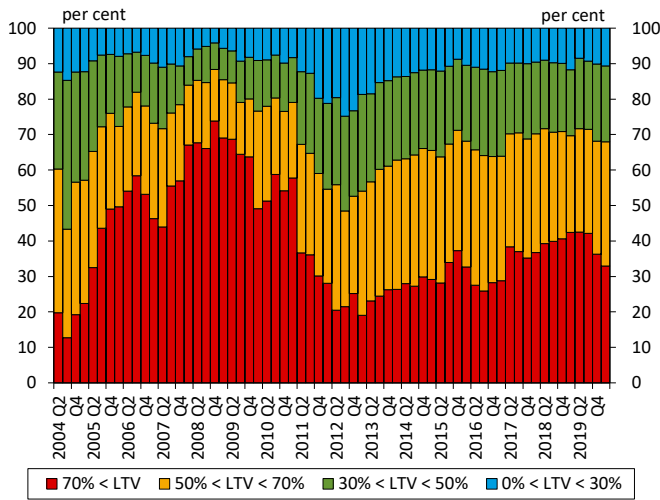
Source: MNB

Chart 34: Household loans distribution by collateralisation



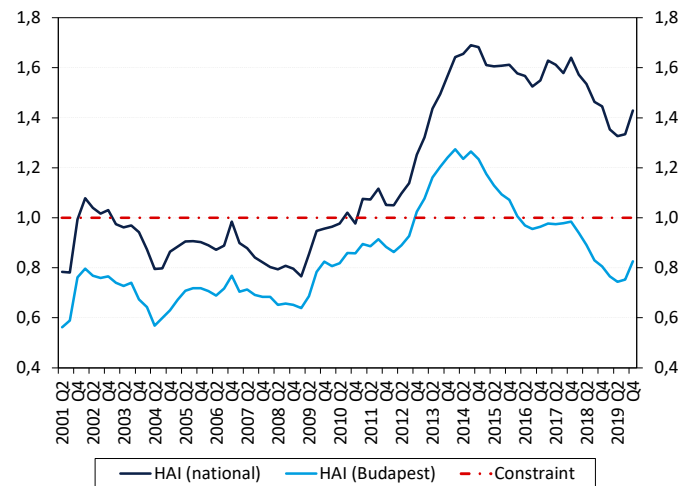
Source: MNB

Chart 35: Distribution of new housing loans by LTV



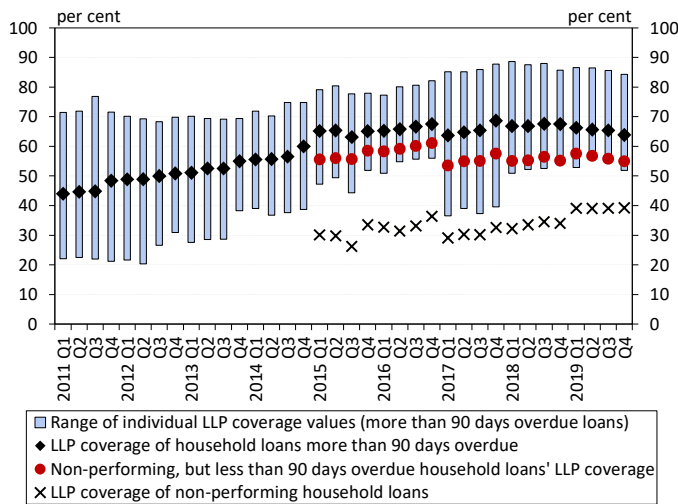
Source: MNB

Chart 36: Housing Affordability Index (HAI)



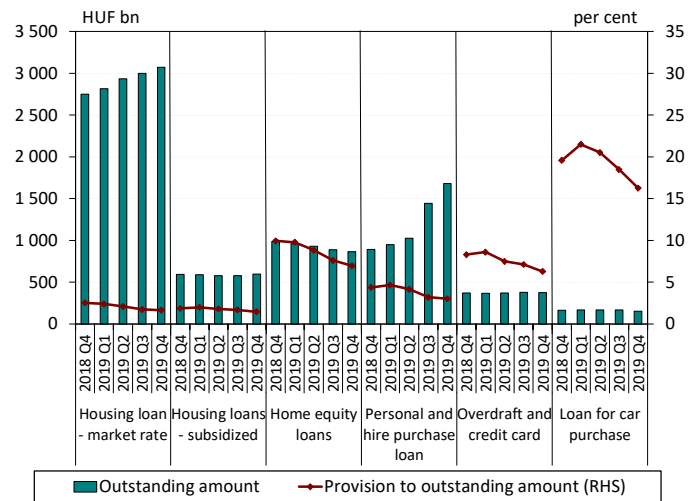
Source: MNB

Chart 37: Loan loss coverage ratio of non-performing household loans



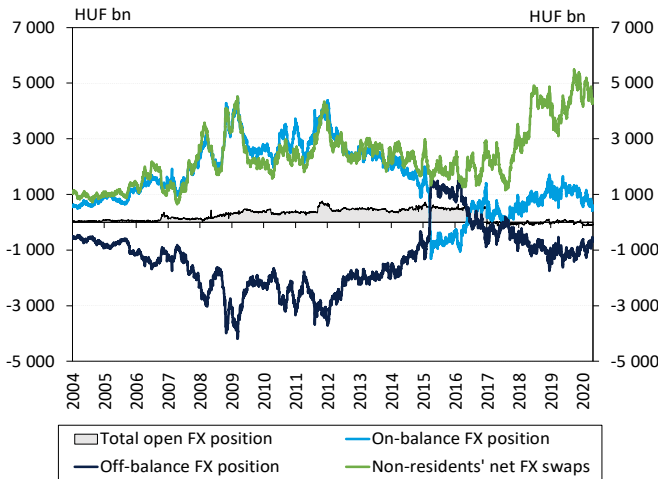
Source: MNB

Chart 38: Provisioning on household loans of financial institutions



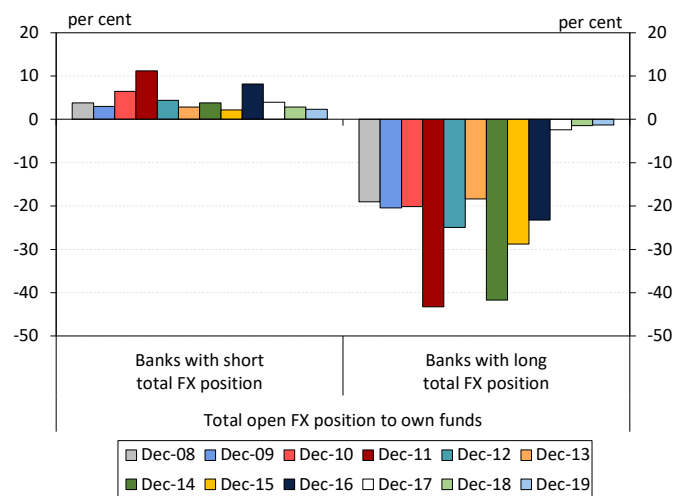
Source: MNB

Chart 39: Open FX position of the domestic banking sector



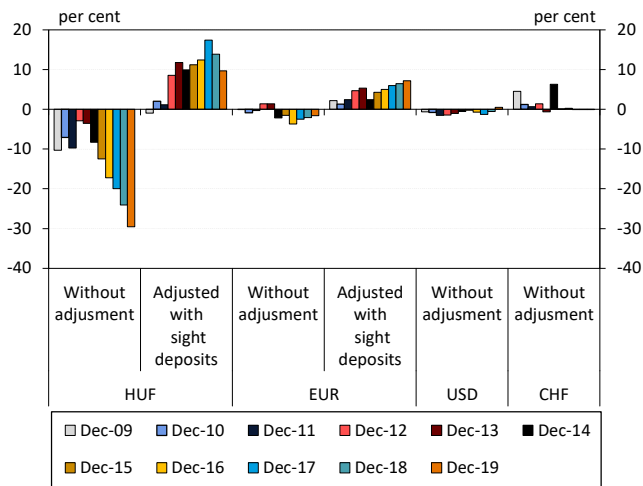
Source: MNB

Chart 40: The exchange rate exposure of the banking sector



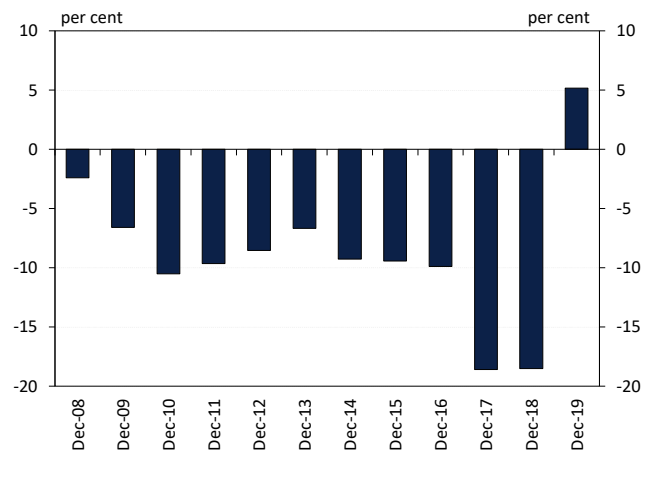
Source: MNB

Chart 41: 90-day re-pricing gap of the banking sector



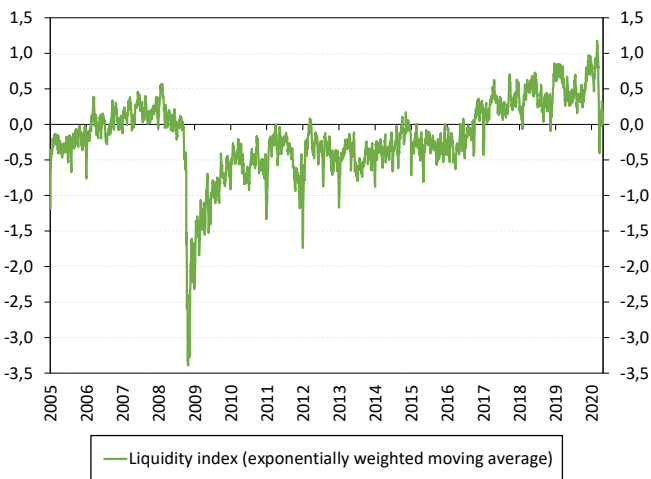
Source: MNB

Chart 42: Estimated maximum loss based on interest rate risk stress tests relative to equity



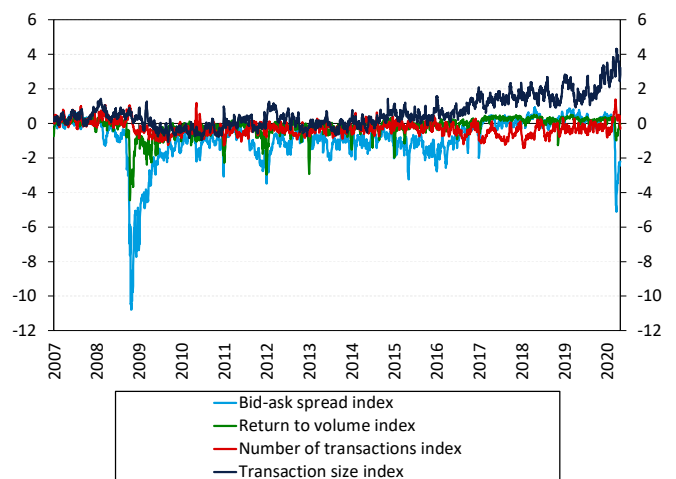
Source: MNB

Chart 43: Liquidity index (exponentially weighted moving average)



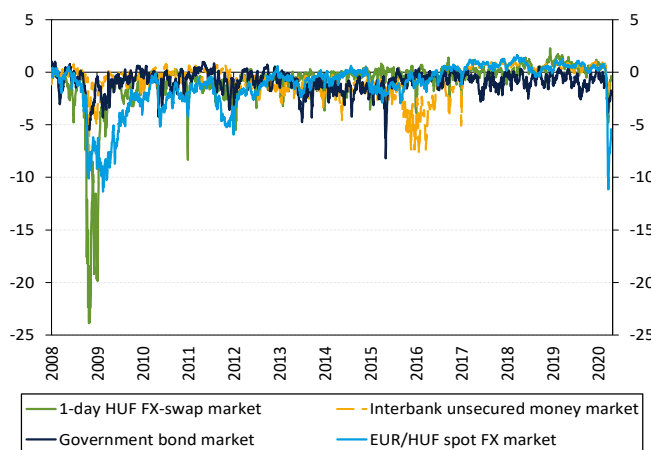
Source: MNB, KELER, Reuters, DrKW

Chart 44: Liquidity sub-indices (exponentially weighted moving average)



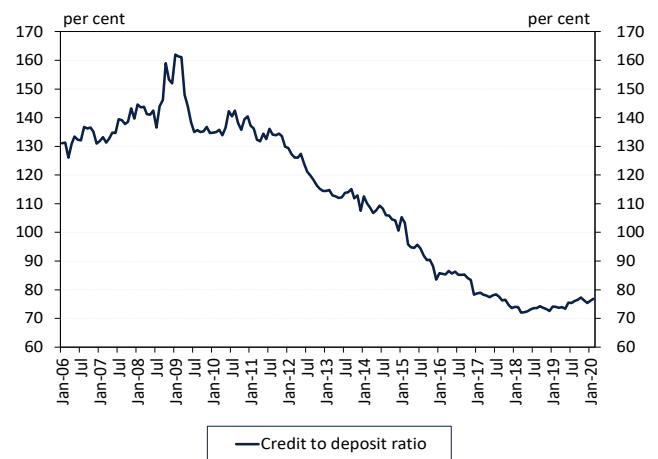
Source: MNB, KELER, Reuters, DrKW

Chart 45: Bid-ask spread indices of the major domestic financial markets (exponentially weighted moving average)



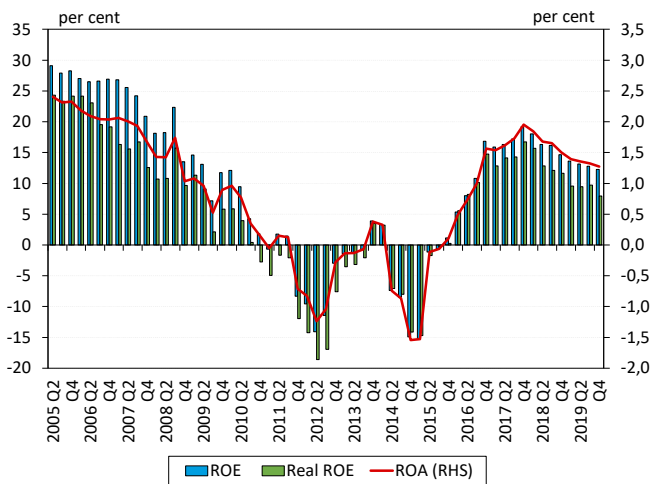
Source: MNB, KELER, Reuters, DrKW

Chart 46: Credit to deposit ratio of the banking sector



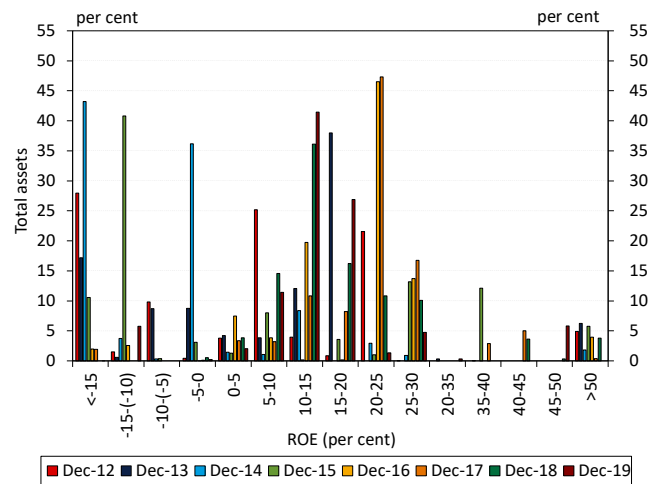
Source: MNB

Chart 47: ROA, ROE and real ROE of the credit institution sector



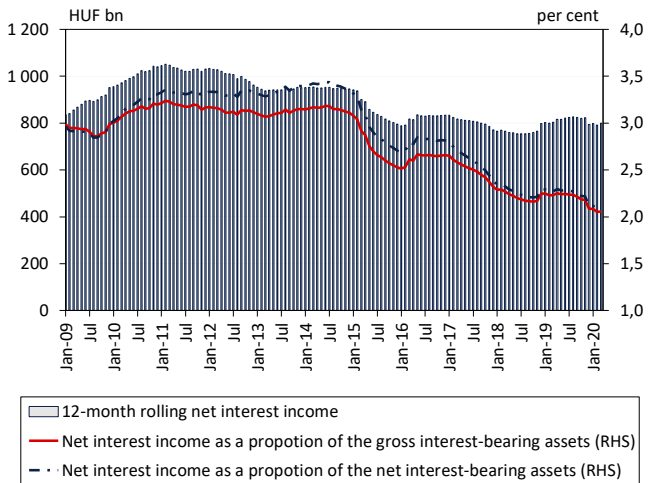
Source: MNB

Chart 48: Dispersion of banks' total assets by ROE



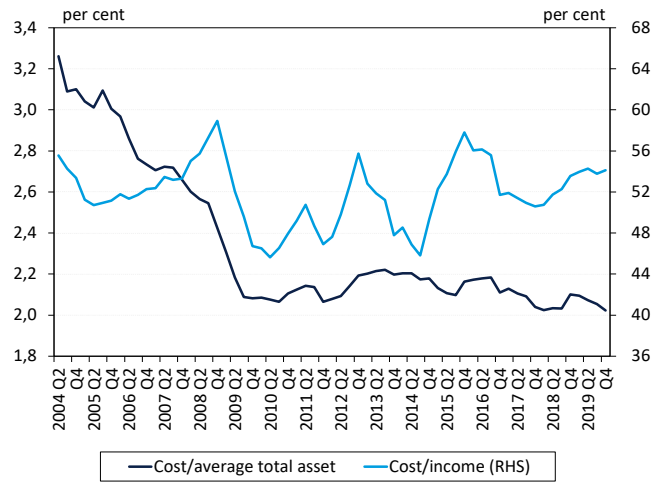
Source: MNB

Chart 49: Net interest income as a proportion of the gross and net interest bearing assets in the credit institution sector



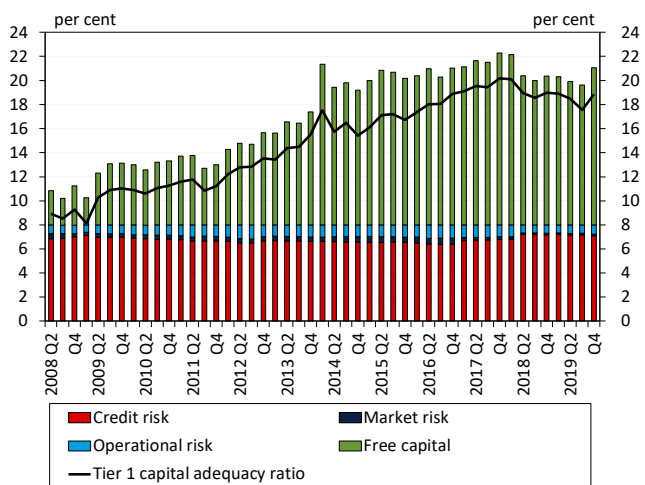
Source: MNB

Chart 50: Operating efficiency indicators of the banking sector



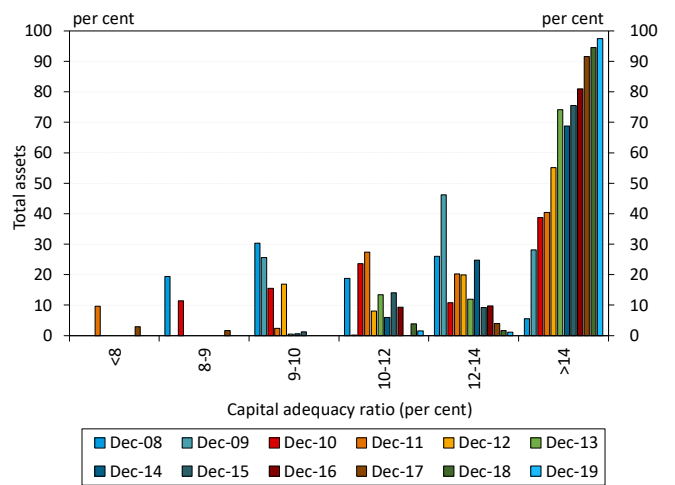
Source: MNB

Chart 51: Banks' capital adequacy ratio (CAR) and Tier 1 capital adequacy ratio



Source: MNB

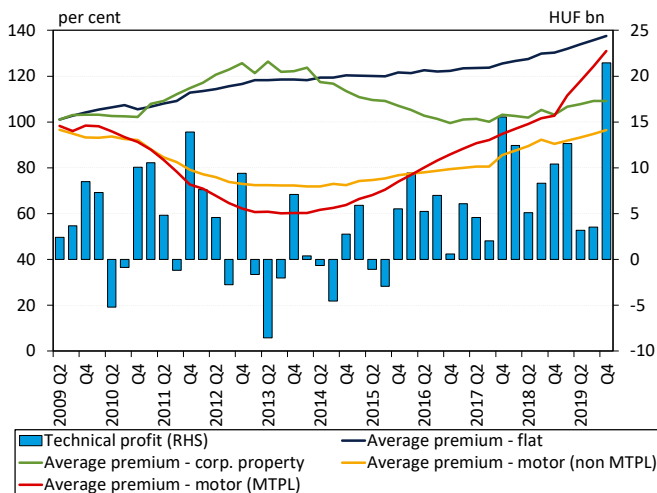
Chart 52: Dispersion of banking sector's total assets by capital adequacy ratio



Source: MNB

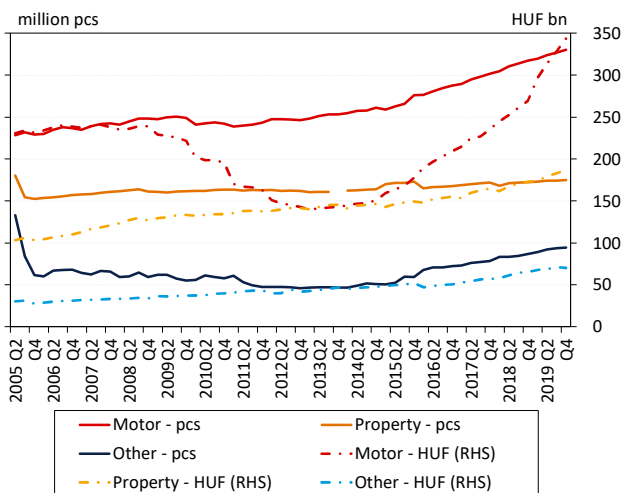
7. Institutional investors

Chart 53: Underline data of insurance tax



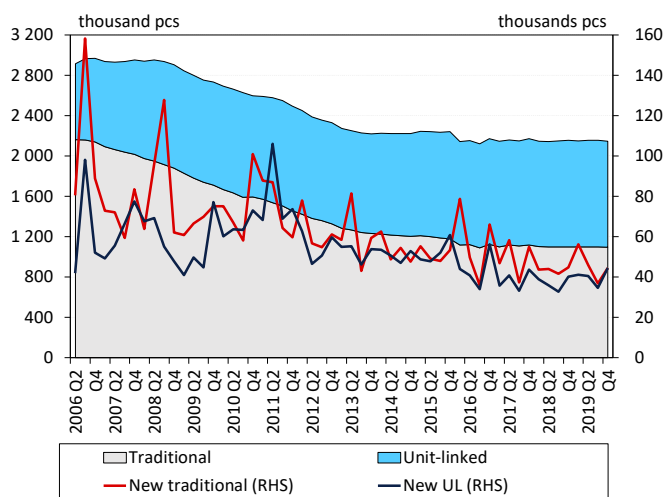
Source: MNB

Chart 54: Development of the outstanding amount of non-life insurance



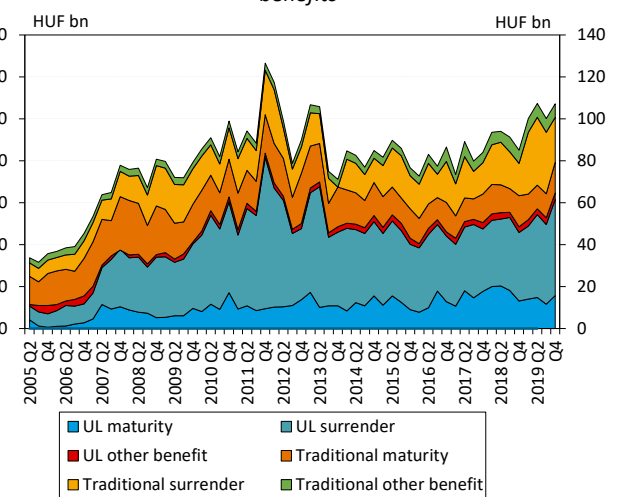
Source: MNB

Chart 55: Development of the outstanding amount of life insurance



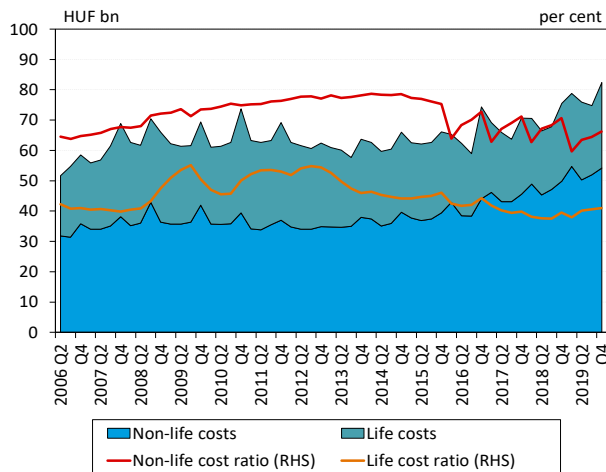
Source: MNB

Chart 56: Development of the outstanding amount of life insurance benefits



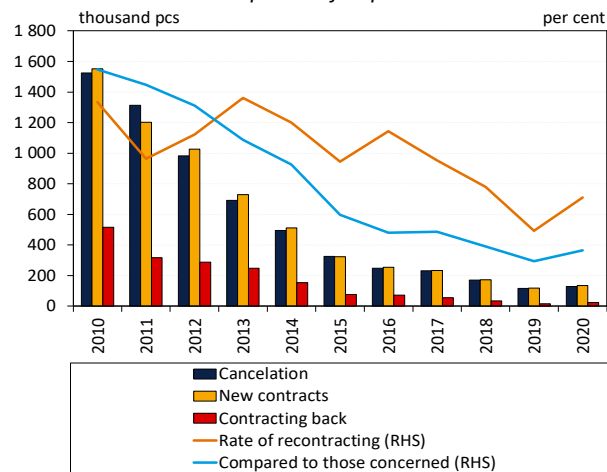
Source: MNB

Chart 57: Costs in the insurance sector



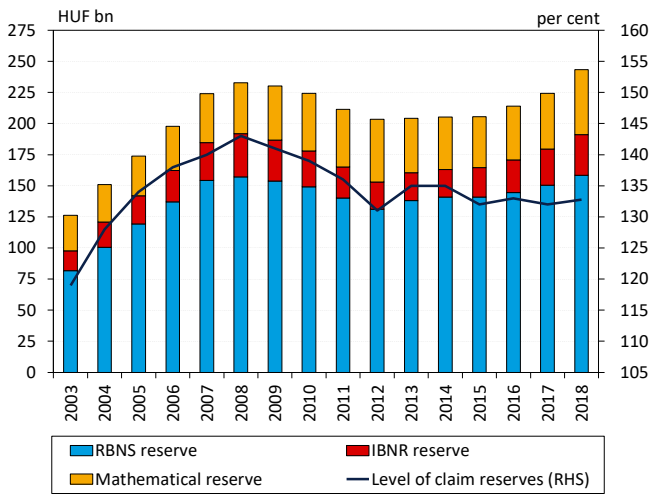
Source: MNB

Chart 58: Development of mtpl insurance contracts



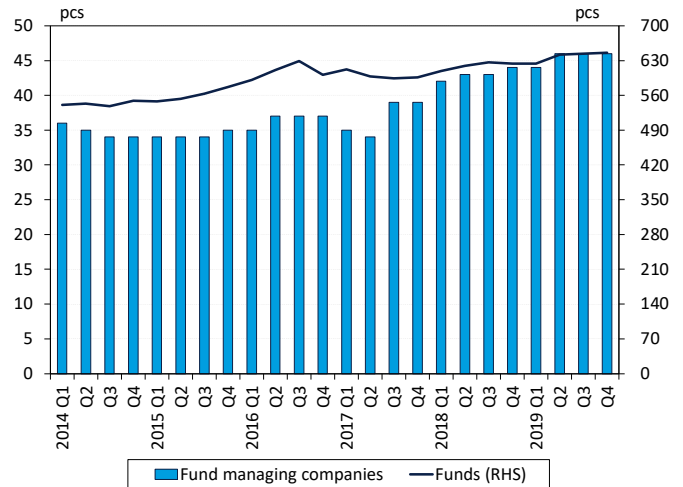
Source: MNB

Chart 59: Development of gross mtpl reserves



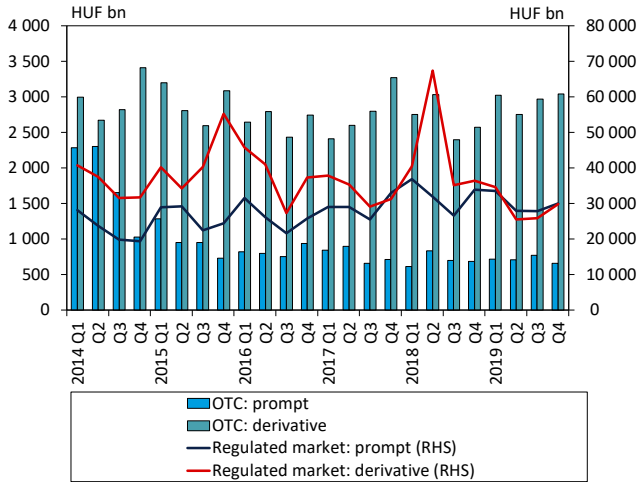
Source: MNB

Chart 60: Number of investment fund managing companies and investment funds



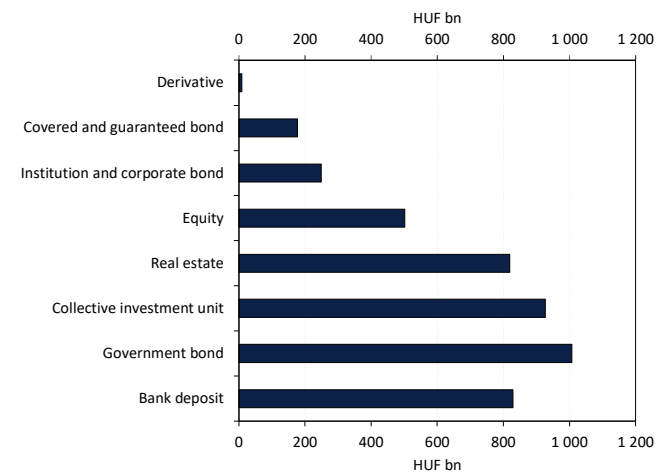
Source: MNB

Chart 61: Capital market turnover of investment firms



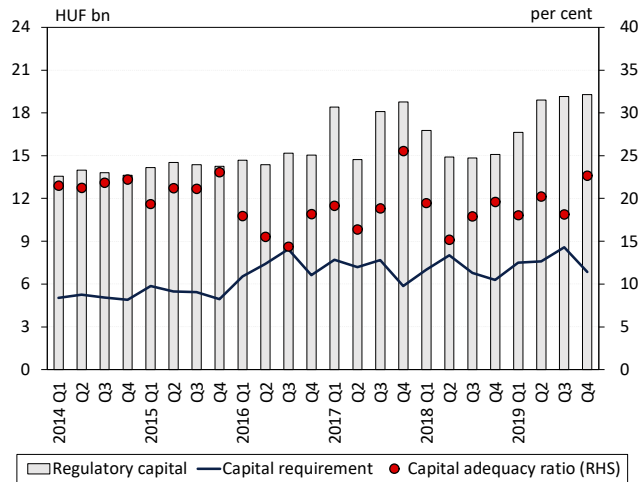
Source: MNB

Chart 62: Asset allocation in mutual funds



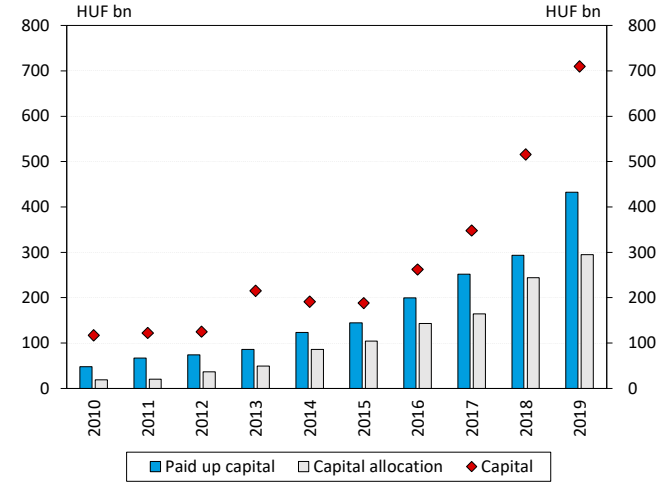
Source: MNB

Chart 63: Capital adequacy ratio (CAR) of investment firms



Source: MNB

Chart 64: Capital and capital allocation of venture capitals



Source: MNB

Notes to the appendix

The chart date (e.g. 2016) 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:

The open FX position of households has turned because of the FX conversion. The compensation of this is shown at banks temporarily (see chart 39), by time it is expected to get to the consolidated state with the MNB.

Chart 10:

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

Chart 12:

Number of bankruptcy proceedings of legal entities, aggregated as of the date of publication and cumulated for 4 quarters, divided by the number of legal entities operating a year before.

Chart 13:

Number of bankruptcy proceedings of legal entities, aggregated as of the date of publication and cumulated for 4 quarters, divided by the number of legal entities operating a year before.

Chart 14:

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

Chart 17:

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

Chart 18:

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

Chart 19:

Spreads based on the APR.

Chart 20:

2002 average = 100 per cent.

Chart 23:

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

Chart 26:

Exchange rate adjusted values.

Chart 27:

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

Chart 28:

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

Chart 35:

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

Chart 36:

HAI shows how many times the income of a household with two average wages covers the income necessary for the purchase of an average (65 m²) dwelling from loan. Parameters of loan product except for the interest rate are throughout unchanged. LTV = 70%, PTI = 30%, maturity = 15 year.

Chart 37:

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

Chart 39:

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

Chart 41:

The values for December 2019 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 42:

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, we applied the new interest rate risk model detailed in Box 10 of this report. While for earlier calculations we assumed shocks of each currency's yield curve, for December 2019 we only assumed the shock-like upward shift of the HUF curve.

Chart 43:

A rise in the liquidity index indicates an improvement in the liquidity of the financial markets.

Chart 44:

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 45:

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 46:

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 47:

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 48:

Pre-tax profit.

Chart 49:

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 50:

Cost: previous 12 months.

Income: previous 12 months.

Average total asset: mean of previous 12 months.

Chart 51:

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 54:

Motor insurance premiums contains insurance tax from 2019.

Chart 61:

Sum turnover of investment firms and credit institution.

Chart 62:

31-Dec-2019

Ferenc Deák

(17 October 1803 – 28 January 1876)

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

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

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

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

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