MACROPRUDENTIAL REPORT

2020

'The only road to perfection is one
where people work for the common good.'
Count István Széchenyi

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Foreword

The 2008 global financial crisis fundamentally changed how the maintenance of financial stability was perceived. The lesson learnt from the severe disorders of the financial system is that in addition to the interventions of solely microprudential focus, targeted at the stability of the individual financial institutions, the mitigation of systemic financial risks also call for properly calibrated macroprudential regulations.

Act CXXXIX of 2013 on the Magyar Nemzeti Bank vested the MNB with strong authority and the proper means to efficiently manage financial systemic risks appearing at the national level, within its capacity as micro- and macroprudential authority, and through its consumer protection duties to support the preservation of trust in the financial system. The MNB applies its reinforced mandate proactively and in line with the regulatory framework of the European Union.

The purpose of the Macroprudential Report is to present the macroprudential instruments applied by the MNB to prevent and address the systemic risks presented in the Financial Stability Report, as well as the effects of those and the adjustment of market participants. In addition, it also describes developments in the area of financial consumer protection that contribute to the maintenance of financial stability through strengthening trust in the financial system. In line with the MNB's Statute, macroprudential and supervisory strategy, the publication intends to make the MNB's measures supporting financial stability easy to understand both for the actors of the sector and the general public.

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Executive Summary

In its Macroprudential Report, the MNB, as macroprudential authority, provides a description of how the currently applied macroprudential instruments work and how they affect the sustainable financing of the real economy, and evaluates adjustment by market participants. In September 2020, the following key messages can be drawn in respect of the instruments in question:

1. *The coronavirus pandemic resulted in an unexpected and extremely sharp increase in financial and economic risks across the world. The impacts of the pandemic on the real economy at global level may reach or even exceed those of the 2008 subprime mortgage crisis. However, the emerging risks to the financial system are managed much more smoothly owing to the macroprudential framework developed in recent years and fast central bank interventions.*

2. *The coronavirus pandemic entails severe negative economic and financial consequences, the exact degree of which is difficult to assess. The resulting shock has had strong effects on both business and financial cycles, which also affects the application of the countercyclical capital buffer (CCyB). Based on the development of cyclical systemic risks, until early 2020 the MNB had not found it justified to require institutions to build up the capital buffer, which may be postponed to a later date due to the existing economic and financial uncertainties.*

3. *The borrower-based measures in effect since 2015 effectively mitigated the negative impacts of the coronavirus pandemic. The debt-service-to-income (DSTI) ratio requirement created sufficient income buffer on the borrowers' side, while the loan-to-value (LTV) requirement protects lenders against a potential correction in real estate prices. In the case of the borrower-based measures, there has been no material sign of borrowers' income position becoming overstretched or an increase in loan-to-value ratios, nor any major adaption through other channels (e.g. extension of maturities) by customers borrowing at the regulatory limits. The MNB continuously monitors the loan portfolio of households that took advantage of the payment moratorium, and will take additional measures to mitigate the potential risks, as necessary.*

4. *The liquidity position of the banking sector remains stable, although before the coronavirus banks satisfied the liquidity coverage ratio (LCR) requirement with gradually decreasing buffers. After the onset of the coronavirus pandemic, liquidity buffers increased significantly, mostly as a result of the MNB's liquidity enhancing measures, and thus banks have sufficient liquid assets to satisfy potential surplus liquidity demand caused by the pandemic. The vast majority of banks would be able to comply with the net stable funding ratio (NSFR) requirement, entering into force in summer 2021, already now; adjustment is expected only at a few smaller institutions.*

5. *With a view to offsetting the potential impacts of the coronavirus pandemic on bank financing, the MNB implemented temporary tightening – maintained until September 2020 – in the foreign exchange funding adequacy ratio (FFAR) and in the foreign exchange coverage ratio (FECR) aiming at reducing the maturity mismatches in foreign currency positions and the on-balance sheet open foreign currency position. The banking sector fulfils the MNB's stable funding requirements with adequate reserves, and thus they do not hinder lending activity likely to pick up again following the pandemic.*

6. *The introduction and gradual tightening of the regulation related to the mortgage funding adequacy ratio (MFAR) efficiently supported the development of the domestic mortgage bond market, in addition to increasing the ratio of stable forint funds. Pursuant to the amendment of the mortgage funding adequacy ratio requirement in autumn 2019 before the coronavirus pandemic, banks must finance at least 25 percent of the mortgage loans by longer-term mortgage-based funds; and the qualitative requirements related to eligible funds were also tightened. Although the sector's participants adjusted smoothly to these changes, in spring 2020 the MNB decided to suspend temporarily the rules restricting cross-financing in the calculation of the MFAR to mitigate the effects of the coronavirus.*

7. *In view of the extraordinary circumstances caused by the coronavirus pandemic, the MNB decided to temporary release the capital buffer requirements applicable to other systemically important institutions (O-SII) from 1 July 2020. Accordingly, the banks affected will have to comply with the capital buffer ratios scheduled to 2020 later, from 2024, and they will have to build these buffers repeatedly in three years starting from 2022. The capital released as a result of the lifting of the capital buffer requirements supports the banking sector's potential loss absorbing capacity, the maintenance of its lending activity and thereby its contribution to growth.*

8. *From the second half of 2019 no bank was required to maintain a systemic risk buffer (SyRB), since the risks stemming from problem commercial real estate exposures declined as a result of portfolio cleaning, also supported by the capital buffer requirement. In autumn 2019, with a view to preventing the build-up of future risks, the MNB modified the requirement by also taking into consideration the volume of non-problem foreign currency project financing loans in addition to problem portfolios when determining the capital buffer rates. In order to mitigate the effects of the coronavirus pandemic, in spring the MNB decided not to prescribe a systemic risk buffer in 2020.*

9. *In the second half of 2019, the MNB achieved major progress in the development of the crisis management framework supporting financial stability: it deepened the resolution plans further and started to prescribe MREL, which completes the resolution framework. The MREL became comprehensive at the beginning of 2020; however, in view of the coronavirus pandemic the MNB postponed compliance with the interim MREL objectives by six months.*

10. *The MNB's financial consumer protection activity strengthens trust in the financial system by enforcing the risk-based approach. In 2019 the focus of the MNB's inspections was on the risks of variable-rate housing loans and credit card contracts, information provided in respect of consumer loans, the changes to interest conditions of consumer loans and the adequacy of the content of advertisements, which was supplemented by ensuring the smooth implementation of the moratorium on payments from March 2020.*

11. *Due to the 2019 amendment of the European Single Rulebook defining the prudential requirements for financial institutions, the framework of macroprudential regulation will also change from 2021. The changes mostly affect the application of capital buffer requirements: as regards the systemic risk buffer, novelties include the extension of the range of risks that may be covered and the possibility to prescribe it on a sectoral basis, and, as regards the capital buffers for other systemically important institutions, the increase in the rate that may be imposed. Although the present application of capital buffers in Hungary can be maintained under the new regulation as well, the change in the regulatory framework may justify a review of the elements of the domestic set of instruments in the future. In relation to the latest amendments at EU level, introduced due to the coronavirus pandemic, the purpose of which is to maintain the banking sector's lending capacity, it should be noted that those essentially had no effect on the set of macroprudential instruments.*

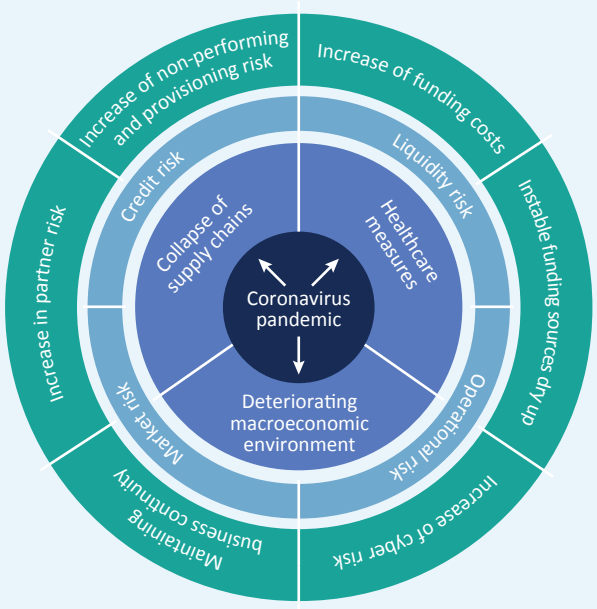
12. *The environmental damages caused by the climate change pose physical risks to the global and domestic economy. The MNB started to survey the exposure of the domestic financial system along the potential systemic risks stemming from the climate change. In addition, it examines the possibility of developing incentives also in macroprudential regulation that divert the banking sector toward green financing, first of all within the framework of the requirement related to the mortgage funding adequacy ratio.*

13. *By introducing the Certified Consumer-friendly framework, the MNB fosters the stimulation of competition in the financial sector and the pursuit of financial stability. The extension of the range of products certified by the MNB in the home insurance market is warranted to preserve the stable value of collateral and stimulate market competition, and, in the personal loan market, to reduce high interest rate spreads and increase the efficiency of the lending processes. Certified Consumer-friendly Home Insurance is available to consumers since January 2020, while it will be possible to apply for Certified Consumer-friendly Person Loans from January 2021.*

1 Financial stability consequences of the coronavirus pandemic

The coronavirus pandemic led to an unexpected and extremely severe financial and economic crisis across the world. As a direct effect of the crisis, liquidity and funding risks increased due to rises in market volatility and the deterioration in the funding conditions. A worsening macroeconomic environment may cause an increase in credit losses in the corporate and household sectors. Due to the increasing significance of digitalisation resulting from the direct health risk of the pandemic on employees and the epidemiological measures, proper preparation for operational risks have become particularly crucial. The effects of the pandemic on the real economy may reach or even exceed those of the 2008 subprime mortgage crisis; however, despite the fact that it also has a major effect on the financial system, due to the micro- and macroprudential framework developed in recent years and to rapid central bank interventions, risks are managed more quickly and smoothly.

Chart 1
Transmission mechanism of coronavirus pandemic

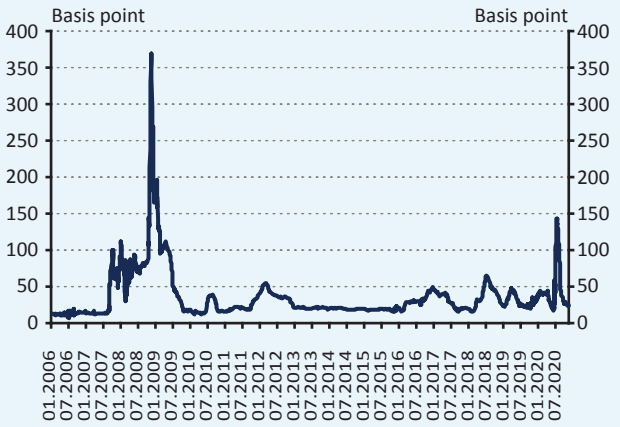


Source: MNB.

1.1 THE CRISIS CAUSED BY THE CORONAVIRUS PANDEMIC DIFFERS FROM THE 2008 SUBPRIME MORTGAGE MARKET CRISIS

The measures introduced to contain the pandemic brought about a deterioration in the macroeconomic environment and increased financial risks for banks. Contrary to the 2008 subprime mortgage market crisis, which spread over from the financial sector to the real economy, the present crisis is an unprecedented phenomenon affecting both the demand and the supply sides and originating from outside the financial system, having a major impact on it as well (*Chart 1*). Nevertheless, as a result of the macroprudential framework developed in recent years and the lessons learnt from previous crises, the authorities are now able to reduce the risks of the financial sector, and thereby their negative effects, more efficiently.

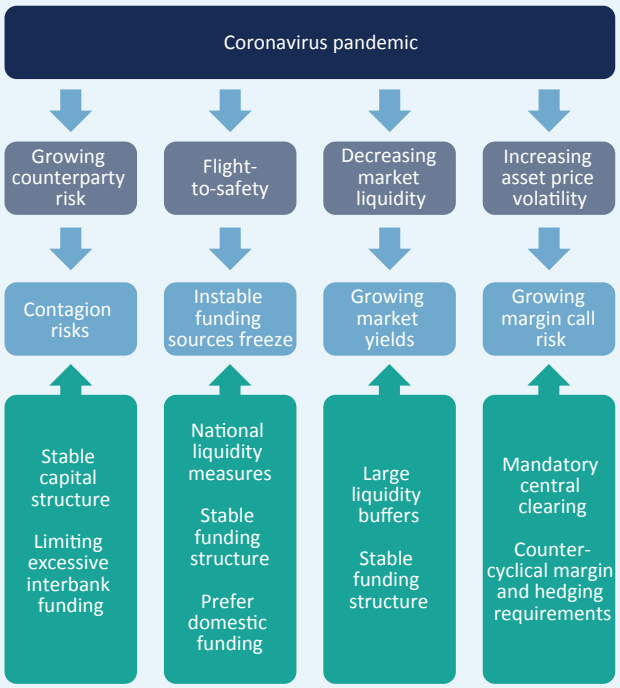
Chart 2
Changes in LIBOR-OIS spread



Note: LIBOR-OIS spread measures the liquidity and funding risk of the financial system.

Source: Bloomberg.

Chart 3
Liquidity and funding effects of the coronavirus pandemic



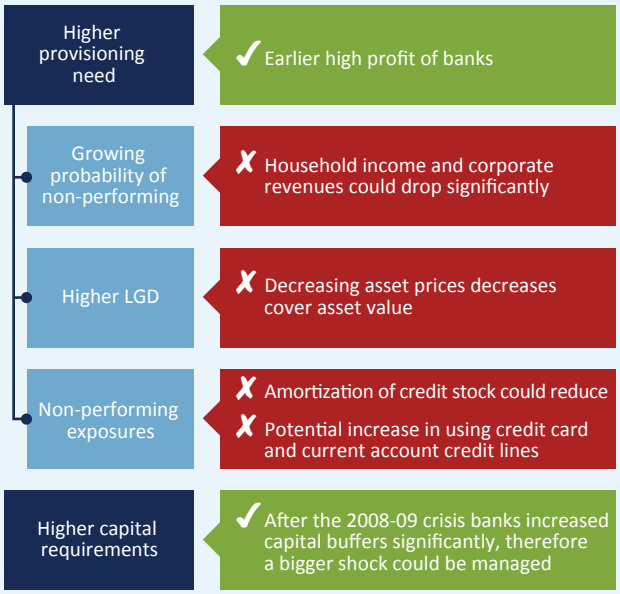
Source: MNB.

1.2 LIQUIDITY AND FUNDING RISK MANAGEMENT IS SUPPORTED BY THE ABSORPTION OF BUFFERS AND CENTRAL BANK INTERVENTIONS

Liquidity and funding risks rose in parallel with the increase in uncertainty and risk aversion that followed the outbreak of the pandemic (*Chart 2*). The restrictions introduced to contain the pandemic increased the uncertainty of economic outlook to an extreme degree, and therefore the fall in the risk appetite of financial market participants (flight-to-safety) led to an increased volatility of asset prices. The price of riskier assets rose, while market liquidity declined. Liquidity risk increased greatly by mid-March, but its extent still has not reached the increase observed in the 2008 crisis. The magnitude of the increase was partly mitigated by banks' preparedness, also supported by the regulatory measures, and partly by the quick responses given by central banks. Due to the increased risks, the margin call requirements linked to derivative transactions and, consequently, demand for the most liquid assets grew, which market participants tried to fulfil by repo transactions or by selling bonds. However, due to extreme risk aversion, even demand for government securities decreased temporarily, and thus the stabilisation effect of these markets worked only to a limited degree (*Chart 3*).

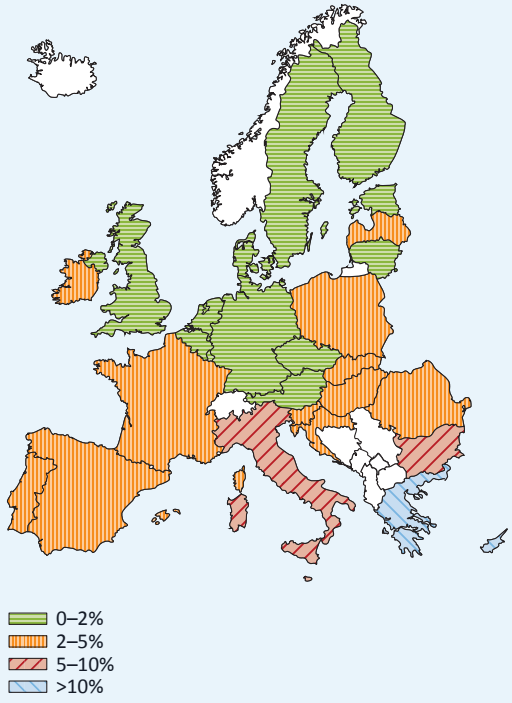
The coronavirus has hit the banking sector in a much more stable liquidity and funding position than in 2008. These positions were also strengthened further by rapid central bank measures. New macroprudential requirements were established building on the experience gained from the 2008-2009 crisis. As a result, banks were much more prepared to face the risks caused by the coronavirus pandemic. The requirement related to the 100 percent liquidity coverage ratio (LCR) was introduced in Europe in 2018 to increase the liquidity stress absorbing capacity. The mitigation of the short-term liquidity risks was substantially facilitated by central banks' measures to boost liquidity, which ensure the necessary buffers by improving the LCR (e.g. through the broadening of the range of collateral) and also provide the banking sector with direct liquidity (e.g. waiving the reserve requirements).

Chart 4
Credit risk effects of the coronavirus pandemic



Source: MNB.

Chart 5
Share of non-performing loans in the EU



Note: Credit institution sector.
Source: ECB

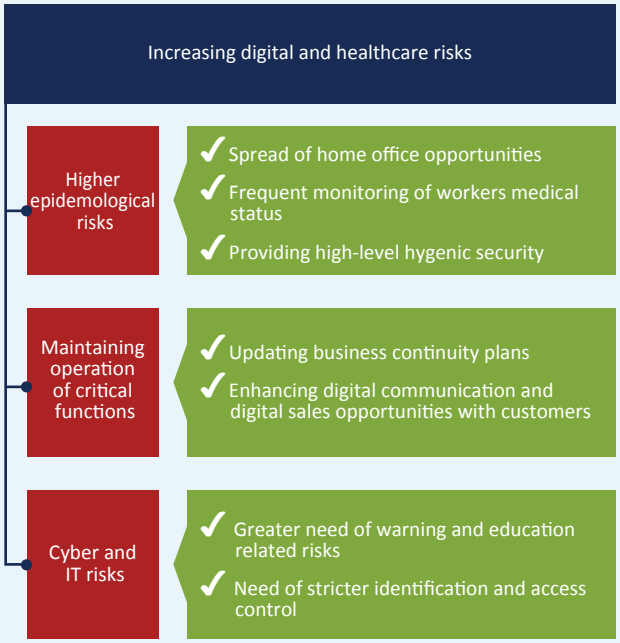
1.3 LOAN PORTFOLIO QUALITY COULD BE MAINTAINED BY THE PAYMENT MORATORIUM IN THE SHORT TERM AND BY PROACTIVE RESTRUCTURING BY BANKS OVER THE LONG TERM

The coronavirus pandemic increases the credit risk of the loan portfolio through numerous channels. The default risk of companies – and of their employees – operating in the sectors directly affected by the restrictions due to the pandemic increases, which may spread gradually over to sectors less exposed to the epidemiological measures. In the decelerating economy asset prices start to decline, leading to the depreciation of collateral, which also increases the degree of loss arising from default. These impacts may increase expected loss on banks' loan portfolio significantly, and consequently the amount of loan loss provisions to be set aside by banks. Moreover, credit loss potentially exceeding impairment may also lead to major capital losses (*Chart 4*). During the temporary period preceding recovery, the moratoriums and other proactive measures taken by banks may efficiently support clients' liquidity situation, thereby mitigating the higher credit risk appearing over the short term. The present resilience of banks is also substantially increased by the fact that in most countries banks successfully cleaned from the balance sheet the non-performing loan portfolio accumulated during the previous crisis, and thus the future focus should be on the maintenance of the current portfolio quality (*Chart 5.*).

1.4 GAINING INCREASING IMPORTANCE DUE TO THE PANDEMIC, OPERATIONAL RISKS LINKED TO DIGITALISATION CALL FOR A NEW APPROACH BY BANKS

Financial institutions need to ensure their continuous operation. Through increased operational risk, the pandemic posed new challenges to financial institutions (*Chart 6*). Over the short term, financial institutions tried to respond to the increased number of online customer enquiries by offering a strengthened digital customer service. In addition, as a result of the coronavirus pandemic, teleworking has become a general practice for banks as well.

Chart 6
Effects of the coronavirus pandemic on operational risk



Source: MNB.

Chart 7
Effects of regulatory measures related to the coronavirus pandemic on banking sector

	Liquidity environment	Balance sheet strength
Monetary policy	✓ Increasing market liquidity ✓ Improving access to funding	✓ Decreasing capital market losses ✓ Decreasing counterparty and margin call requirements
Fiscal policy	✓ Smoothing liquidity pressure	✓ Decresing credit losses
Prudential requriements	✓ Maintaining stable liquidity and funding structure	✓ Releasing capital buffers, increasing lending capacity

Source: According to BIS

In the future, financial institutions must pay special attention to improving their cyber risk resilience. After easing the restrictions related to the pandemic, the degree of digital administration is expected to decrease slightly; however, online processes may gain greater importance in the future than before. Banks must also respond to the increasing need of customers for online administration and loan application over the longer term, for which they need to provide the necessary IT and security background. Online administration will presumably remain in place, at least partially, after the pandemic, as well. Accordingly, in addition to fending off cyber risks, market participants must also pay greater attention to the development of the IT infrastructure as well as to the protection of customers' and employees' health.

1.5 MACROPRUDENTIAL POLICY ACTIONS SUPPORTED MONETARY AND FISCAL POLICY MEASURES EFFICIENTLY

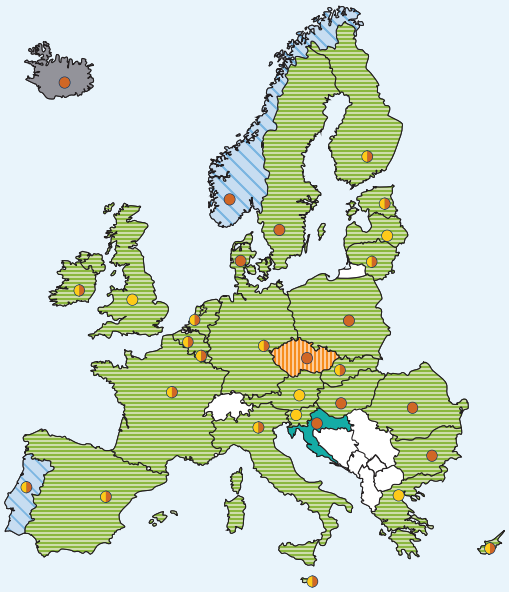
The macroprudential toolkit is able to mitigate the growing risks generated by the pandemic through several channels. It is a fundamental difference between the 2008-2009 crisis and the present coronavirus crisis that the risks facing the banking sector declined substantially partly due to the regulatory measures in recent years. Due to the newly developed set of instruments after the 2008 crisis, in recent years banks have built major liquidity (LCR) and capital buffers (O-SII, CCyB). Using these in the current situation, the impacts of the crisis can be mitigated. Supplementing the monetary and fiscal policy measures through the easing or temporary suspension of the prudential requirements and the release of the capital and liquidity buffers, macroprudential policy supports the maintenance of lending capacities on the one hand, and the firm and proactive macroprudential measures may efficiently shape economic agents' expectations of and mitigate macroeconomic uncertainty (*Chart 7*), on the other.

Box 1

International macroprudential measures to mitigate the risks caused by the coronavirus pandemic

As a result of the coronavirus pandemic macroprudential measures were widely used in the EEA countries to mitigate the impacts of the pandemic. The applied macroprudential tools mostly involved reductions in capital and liquidity requirements or temporary toleration of regulatory requirements violations; however, in some countries (the Czech Republic, Norway, Portugal) the applied borrower-based measures were also eased.

Macroprudential measures taken to mitigate the effects of the coronavirus epidemic in EEA countries



Note: Measures at European level (ECB) are indicated by light brown dots and national measures by dark brown dots.

Source: MNB, ESRB

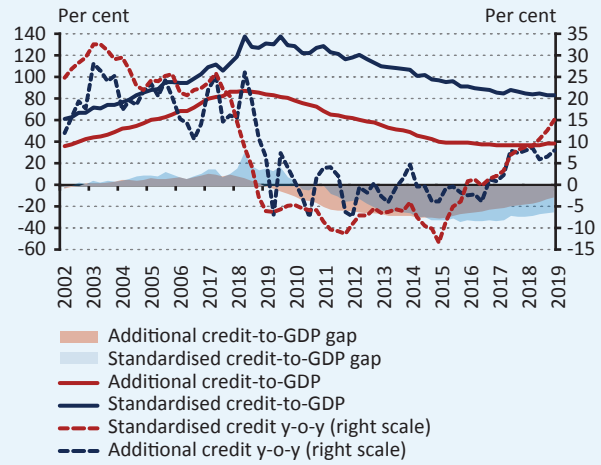
As regards easing capital requirements, the most typical measures included the toleration of using the capital conservation buffer (euro area countries, Hungary, etc.), the release of the countercyclical capital buffer (Latvia, Norway, Bulgaria, Ireland, the Czech Republic, etc.), the reduction in the Pillar II capital recommendation (euro area countries, Hungary, etc.) and of the systemic risk buffer (the Netherlands, Hungary, Poland, Austria). As regards liquidity requirements, toleration of a temporary violation of the regulatory requirement related to the 100 percent liquidity coverage ratio may be mentioned as a general European measure, which in some countries (Hungary, Bulgaria) was complemented by the amendment of liquidity requirements prescribed within national competence.

The domestic prudential measures serve the maintenance of banks' lending capacity. As regards capital requirements for banks, the MNB has temporarily waived compliance with the capital conservation buffer and the Pillar 2 capital guidance, it has released the capital buffer requirement for systemically important institutions and it has also decided to postpone the 2020 review of the systemic risk buffer. As regards liquidity requirements, the MNB fine-tuned the domestic liquidity and funding requirements. The temporary amendment of the foreign exchange funding adequacy ratio and the foreign exchange coverage ratio ensured the maintenance of an adequate rate of stable funding in a turbulent environment on a preventive basis, while in the case of the mortgage funding adequacy ratio, the MNB decided to ease the requirement to respond to the present market circumstances, in order to support raising funds in forint.

2 Countercyclical capital buffer

The cyclical systemic risks of the Hungarian financial system remained low. Credit market activity was buoyant until early 2020. The set of overheating and vulnerability indicators of the cyclical systemic risk map signalled a moderately increasing, but still low level of cyclical systemic risks. The spread of coronavirus epidemic that had become global by March 2020 has severe negative economic and financial consequences which are difficult to assess in terms of their exact extent. The unfolding shock has a major effect on the state and change of both the business and the financial cycles, which also affects the application of the countercyclical capital buffer and the indicators underlying the related decisions. Due to the uncertainty surrounding the economic effects, the determination of the effective capital requirement and the start of the accumulation of the capital buffer may be delayed.

Chart 8
Development of benchmark credit-to-GDP gaps



Note: The gaps are overlapping, non-accumulated areas, in the foreground the closely monitored additional credit / GDP gap is depicted.

Source: MNB.

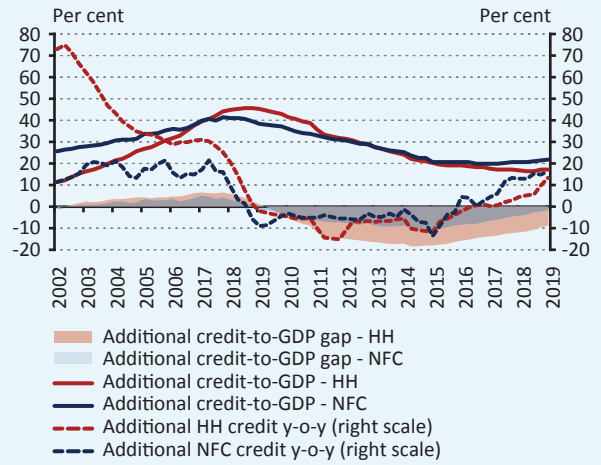
2.1 THE LEVEL OF CYCLICAL SYSTEMIC RISKS WARRANTED NO INTERVENTION EVEN BEFORE THE ONSET OF CORONAVIRUS

Domestic lending and the rate of change in outstanding amount of credit fall significantly short of pre-crisis levels. In 2019, both corporate and household lending grew strongly. The growth rate of the various credit aggregates and their ratio to GDP both fell short of those in period preceding the 2008-2009 crisis (*Chart 8*). All this implied a prudent and sustainable pick-up in lending.

Based on outstanding amount of credit as a percentage of GDP, the Hungarian lending cycle has not entered an overheated phase yet. The credit-to-GDP gap ratios, regarded as the key indicators of the lending cycle[1] (Chart 8), and particularly the additional credit-to-GDP gap, narrowed gradually in the past one year under an essentially stagnating credit-to-GDP ratio. The gaps remained negative, indicating that lending to the economy is below the level acceptable on the basis of the long-term credit-to-GDP trend despite the dynamic credit growth observed until early 2020, real estate market developments and close-to-equilibrium corporate lending.

Corporate lending came close to its equilibrium level. The stock of corporate loans grew rapidly in 2019, leading to the gradual narrowing of the corporate credit-to-GDP gap, which came close to the level justified based on its long-term trend (Chart 9). A closing corporate credit-to-GDP gap is linked to the low level of corporate debt by international standards and a rapid pick-up in corporate investments. However, corporate lending was sustainable due to the industry composition and denomination as well

Chart 9
Development of additional loan stock, loan-to-GDP ratios and gaps by main loan segments



Note: In case of gaps, overlapping, non-cumulated areas.
Source: MNB.

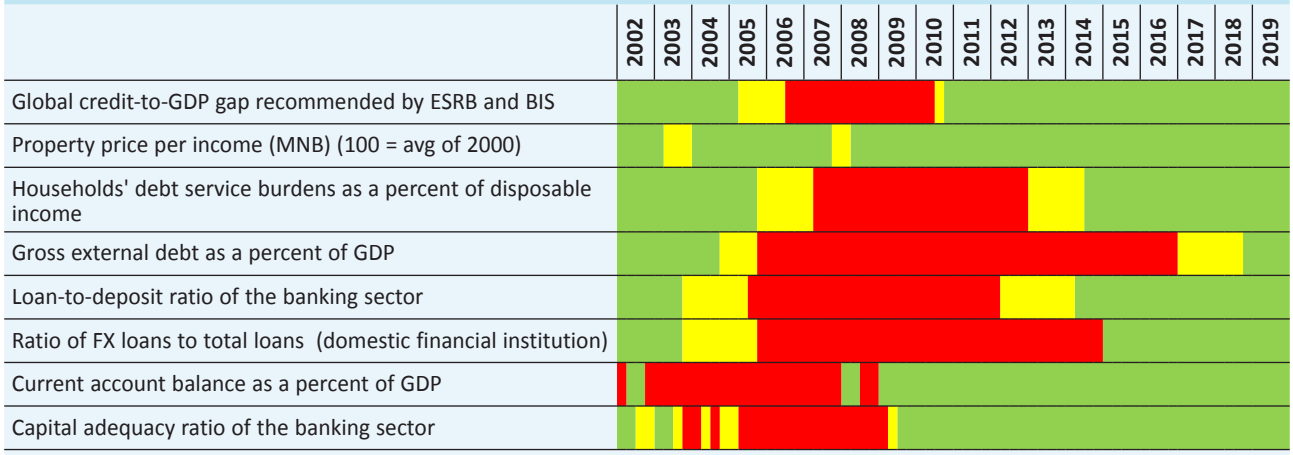
as to the essentially constant conditions of bank lending. Credit expansion has been broad-based, and no significant increase has been seen in the number or in the proportion of heavily indebted companies in recent years.

The values of the supplementary set of indicators monitoring the cyclical risks of the financial system signalled a low level of cyclical overheating and vulnerability. The values of the relevant indicators of the cyclical systemic risk map were at a safe distance from the levels signalling an overheating of the financial system and its vulnerability to external shocks, and they were at a low level also in historical terms *(Table 1*).

2.2 THE BUILD-UP OF THE COUNTERCYCLICAL CAPITAL BUFFER MAY BE STARTED LATER DUE TO THE CORONAVIRUS PANDEMIC

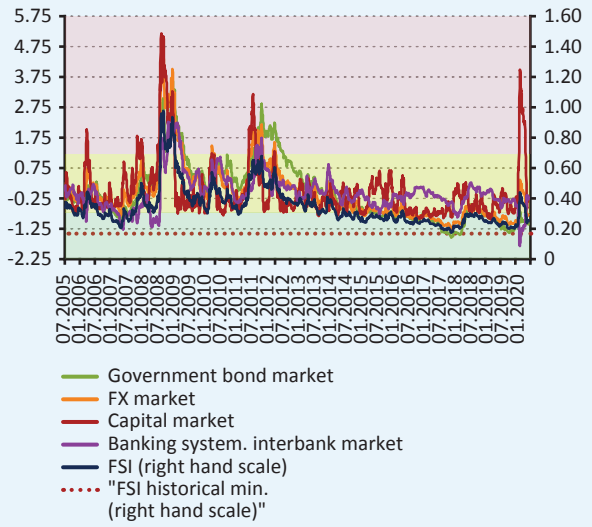
The date when the countercyclical capital buffer will be set, and the capital buffer build-up will be started in Hungary may be delayed further by the complex economic and financial situation arising from the coronavirus pandemic. In the event of a higher level of financial stress and a reversal of the credit cycle, the regulatory authority may immediately release the prescribed level of the countercyclical capital buffer rate in full or in part, in order to ensure that banks' losses are covered and lending activity is sustained, or its decline is cushioned. The release is practicable when the stress level of the financial system crosses a critical level (*Chart 10*) based on the benchmark Factor-based Stress Index (FSI)[2] and a deteriorating economic environment justifies it. In view of the 0 percent

Table 1
Selected indicators of the cyclical systemic risk map, 2002 – Q4 2019



Note: Green colour indicates low, yellow medium and red high cyclical systemic risk. Sources: BIS, HCSO, MNB.

Chart 10
The factor-based financial stress index



Note: FSI values calculated on the basis of estimated factors for 2005-2019, according to Szendrei, T. - Varga, K. (2017). In December 2008, the FSI approached a maximum of 1. Low stress level in green bar, stress status in yellow bar, high critical stress level in red bar. https://www.mnb.hu/letoltes/ccyb-modszertan-uj-hu-1.pdf

Source: MNB.

Chart 11
Announced CCyB measures in the EEA to counteract the effects of the COVID-19 pandemic

Note: data as of 11 August 2020.

Sources: ESRB, BIS, website of national authorities

domestic buffer rate, the MNB did not took a decision on the release due to the financial and economic situation arising from the coronavirus pandemic, but the build-up of the capital buffer is expected to be delayed taking account of the easing of cyclical systemic risks.

The stress level of the financial system surged temporarily at the end of the first quarter of 2020 due to the sharp reaction of the capital market. The observed high stress level was attributable to the following factors, listed in the order of magnitude of their contribution: capital market tensions, an increase in foreign exchange market volatility, a sharp increase in risks in the banking sector as result of the parent banks' CDS and heightened stress in the government securities market resulting from a widening spread between yields on Hungarian and German government bonds with 10-year maturity. Of these, capital market developments had an outstanding effect, which raised the capital market FSI factor to a similar level as seen in the 2008 crisis. The FSI value did not represent a crisis level, and following the initial sharp reaction, it normalised by the beginning of June 2020 (*Chart 10*).

EEA countries made decisions on the release or reduction of the capital buffer to soften the unfavourable impacts of the pandemic on the financial system. Practically all macroprudential authorities of EEA countries with effective or announced countercyclical capital buffers decided to suspend the capital requirement during March and April 2020, in line with basic logic of the operation of the capital buffer requirement (*Chart 11*).

Box 2
Measurement of the cyclical systemic risks building up in Europe

The European macroprudential authorities make efforts to improve their systems monitoring the build-up of cyclical financial systemic risks. One important element of the monitoring system is represented by the credit-to-GDP gap ratios, i.e. the deviations of the credit-to-GDP ratios from their trend values. The theoretical significance of these is as follows. On the one hand, they are able to identify the cyclical factor of the credit portfolio in excess of the fluctuations in GDP, and on the other, they characterise the income generation capacity of loans, and finally at macroeconomic level they may also be interpreted as an indicator of debt service capacity. It can be stated based on all three interpretations that the positive credit-to-GDP gaps may imply the presence of excessive lending.

Currently no generally accepted superior calculation methodology exists for the credit-to-GDP gaps. Based on ESRB Recommendation 2014/1[3] the macroprudential authority of all ESRB member states use the standardised credit-to-GDP gap. Based on empirical analyses, the high values reliably forecast bank crises ensuing within a few years, i.e. the standardised credit-to-GDP gap is a good indicator of accumulating cyclical systemic risks.[4] The standardised credit-to-GDP gap is the result of a univariate trend-cycle decomposition, i.e. for the calculation of the gaps the methodology uses only the credit-to-GDP time series. The univariate credit-to-GDP gap calculated by another method also has a similar or better forecast capacity, at least for certain countries.[5] Accordingly, 20 of the 30 ESRB member states also determined an additional credit-to-GDP gap, which may differ from the standardised gap indicator in its credit-to-GDP content, trend cycle decomposition method and in the length of the financial cycle sought for. The individual authorities try to choose the specification that best fits their country-specific circumstances.

Methods for calculating additional credit / GDP gaps applied in ESRB member countries in the first half of 2020

	Credit stock	GDP	Cretit/GDP forcast	Trend-cycle decom-position method	Searched cycle length
Standardised method	Broad: Loans granted to non-financial corporations and households	4-quarter rolling GDP	The credit / GDP time series forecast should not be taken into account when calculating the credit / GDP gap	One-sided Hodrick–Prescott-filter	30 years (λ = 400 000)
Additional method	Narrower (typically the stock of loans granted by domestic credit institutions to non-financial corporations and households): **BE, CY, CZ, EE, FR, HR, IE, LV, LU, DE, IT, SK**	4-quarter rolling potential GDP: **SK**	Assumes the average of the last 4 quarters for the next 20 quarters: **NO**	The cyclical component is the difference between the current value of the indicator and the minimum value of the last 8 quarters: **CZ**	8 years (_ = 1 600): **RO**
		Seasonally adjusted quarterly GDP: **HR**	Assumes a weighted average of the last 4 quarters for the next 20 quarters: **LT**		10,5 years: **PL**
		4-quarter rolling private sector gross added value: **CZ**	ARIMA(p,1, 0) forcast for the next 28 quarters: **PT**	Approximate two-sided HP filtering: The current period gap for one-sided HP filtering is adjusted based on past differences in standardized one-sided and two-sided gaps: **IT**	15 years (_ = 25 000): **ES**
	Narrower and exchange rate-filtered (foreign currency loans at a fixed exchange rate): **HU**	Rolling 4 quarter GNI: **IE**			

Note: Liechtenstein faces significant data constraints and has therefore been omitted from the table. The projected values of credit / GDP reduce the so-called end-point uncertainty of univariate trend-cycle resolutions. In this case, when determining the current gap value, not only the previous but also the (expected) forthcoming values of credit / GDP can be taken into account, which makes the estimation of the gap more accurate.

Sources: Websites of national macroprudential authorities.

There is a great variety of cyclical systemic financial risks, and as a result, an increasing number of countries have developed a detailed risk map comprising a large number of indicators. At present 10 ESRB member states use a risk map that contains at least 30 indicators. The credit-to-GDP gaps, primarily measuring excessive lending, take a prominent place in these maps, but in addition to them there are also a number of indicators that quantify cyclical systemic risk. The individual maps group the indicators differently, but credit institutions' risk assumption, the solvency of debtors and the overvaluation of investment instruments are three such comprehensive groups which most of the map's indicators can be allocated to. Several maps also contain indicators that specifically identify the realisation of risk or the occurrence of financial stress events (Belgium, the Netherlands, Ireland, Germany, Italy, Spain, Sweden). Moreover, certain maps include indicators that in addition to cyclical risks also measure a few structural systemic risks (Belgium, Ireland, Norway, Italy). The maps usually monitor the systemic risks related to banks, with regard to the current focus of macroprudential policy, but in a few cases they also include some indicators related to non-bank financial intermediary organisations (Belgium, Norway, Italy, Slovakia). The possible values of the individual indicators are allocated to risk categories (from low to high). The threshold values segregating these are determined essentially based on three methods: (1) the bank crisis forecast capacity of the emerging risk ratings, (2) the historic distribution of the indicator's values and/or (3) considering the expert opinions. The threshold values of the different indicators are determined independently of each other. The publicity of the method and the result of determining the threshold values varies.

Cyclical financial system risk maps and aggregate indicators for ESRB member countries in the first half of 2020

Risk map with at least 30 indicators	With detailed documentation: **BE, IE, DE, NO, IT, SE**		With brief documentation: **NL, HU, ES, SK**	
Aggregate measure of cyclical systemic risks	Index of financial cycle: **CZ, HR, LT, DE, PT, SE, SK**	Probability of financial cycle: **FR, IE, PL, LT, NO**	Sub-indices measuring certain subgroups of cyclical system risks: **BE, IT, NO, ES, SE**	Estimated credit / GDP gap using explanatory variables: **DK, IE, HU, ES**

Note: The exact sources for each country are given in the Annex. Sources: MNB collection.

**ESRB tagállamok: EU tagállamok, Izland, Liechtenstein és Norvégia*

Source: MNB gyűjtés.

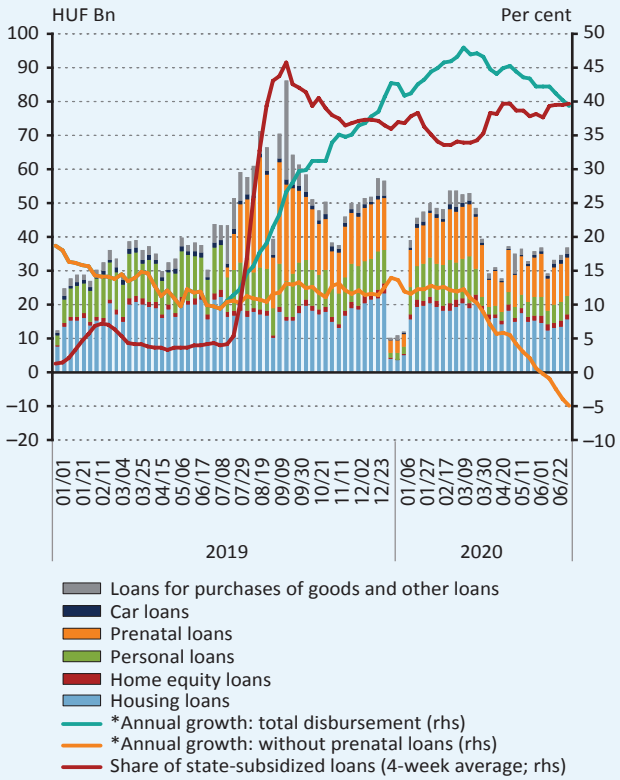
The holistic interpretation of wide-ranging cyclical systemic risks is assisted by the various types of aggregated indices. Aggregated indices also facilitate the quantification of the interaction between the risks carried by the individual indicators, strengthening or weakening each other. Aggregated indices are usually calculated from the indicators also included in the risk map. The aggregated indices created in ESRB member states can be allocated to four categories. (1) Financial cycle indices typically represent the weighted sum of the individual indicators, where efforts are made to use all important individual indicators that determine the financial cycle. Such an index is easy to decompose; however, it may only be determined from that in which phase of the financial cycle we are at present by comparing it to its historic values. (2) Sub-indices of certain sub-groups of cyclical systemic risks are also obtained similarly, but often it is the risk categories signalled by the individual indicators that are weighted together rather than the values of the individual indicators. (3) The third type of aggregated index is an estimate of the probability of a bank crisis in the near future, using the individual indicators. This index can be interpreted also on its own. (4) Multivariate credit-to-GDP gaps represent a more accurate credit cycle indicator than the univariate methods, because the surplus information of the used independent variables related to the cyclical systemic risks is also integrated in these gap indicators.

Taking account of the European practice, the MNB is also enhancing its system monitoring the Hungarian cyclical systemic risks. Currently, the MNB is revising its index serving as additional credit-to-GDP gap, and is also making its cyclical financial systemic risk map more accurate and broader. In addition, the generation of the sub-indices belonging to the updated map's individual groups of indicators and the aggregated index of the cyclical systemic risks has also commenced.

3 Borrower-based measures

In recent years, borrower-based measures ensured that banks disburse only such loans where income ensures the sustainability of debt service. This largely supported that households face the impacts of the coronavirus pandemic with proper income buffers. Household loans in the past 18 months were disbursed close to the limits applicable to the debt-service-to-income ratio (DSTI) at a similar rate as in previous years, and the rising trend of the loan-to-value ratio (LTV) of real estate collateral, observed since 2015, reversed in this period. The amendment of the DSTI limit, differentiated by interest rate fixation period, effective from October 2018, supported the penetration of housing loans with longer interest rate fixation, which also fostered the faster amortisation of outstanding variable-rate loans. To maintain the healthy structure of growth, the MNB continuously monitors (1) the indebtedness of households with potentially deteriorating solvency due to the pandemic; (2) the increase in the maturity of household loans, (3) the risks of riskier loans (e.g. of shorter interest period or loans substituting down payment).

Chart 12
The household credit disbursement of credit institutions



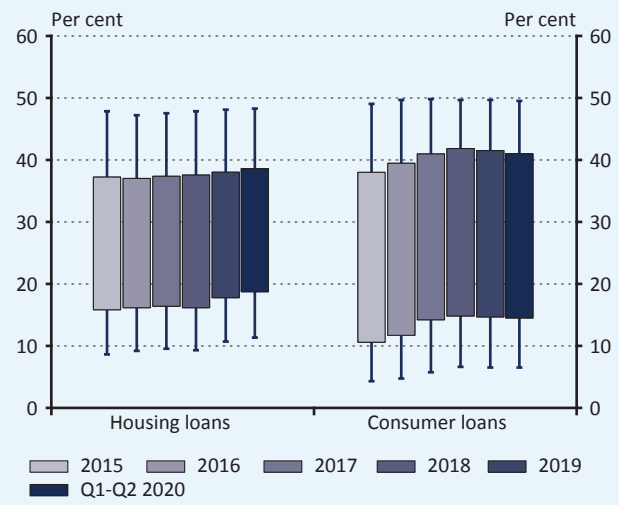
*Note: Without individual business loans. * Increase in the cumulative disbursement for the 12 months preceding the period compared to the same period last year. Government-subsidized loans: interest-subsidized loans and prenatal loans.*

Sources: MNB

3.1 BORROWER-BASED MEASURES (BBMS) IMPROVED CREDIT QUALITY, THEREBY REDUCING RISKS TO STABILITY CAUSED BY THE PANDEMIC

The coronavirus pandemic restrained slightly the dynamic growth rate of household loans driven by the state-subsidised programmes. From July 2019, disbursement of prenatal baby support loans, amounting to HUF 70 billion monthly on average, caused major changes in the structure of lending. The growth rate of 12-month cumulated lending to households rose to 47 percent from 10-20 percent, which was typical before the prenatal baby support loans had been introduced, relative to the previous 12 months, while the share of state-subsidised credit schemes increased to 35 percent from the previous 5 percent. As a result of the coronavirus pandemic, the annual cumulated growth rate of lending slowed down to 38 percent by the end of July, while the ratio of state-subsidised credit schemes rose by an additional 5 percent (*Chart 12*). However, gross new lending declined quarter on quarter by 24 percent in the second quarter due to the coronavirus pandemic. A slowdown in lending has been caused mainly by a declining personal loan lending, which can be explained with the time required for developing products that satisfy the preferential **annual percentage rate of charge** (APRC) introduced during the emergency situation, falling demand and slightly tightened credit conditions. Looking ahead, persistently strong demand for prenatal baby support loans and other state-subsidised loan products despite the crisis may continue to support lending to households; however, the annual growth rate of lending is still expected to decrease due to the incorporation of these products into the base of comparison.

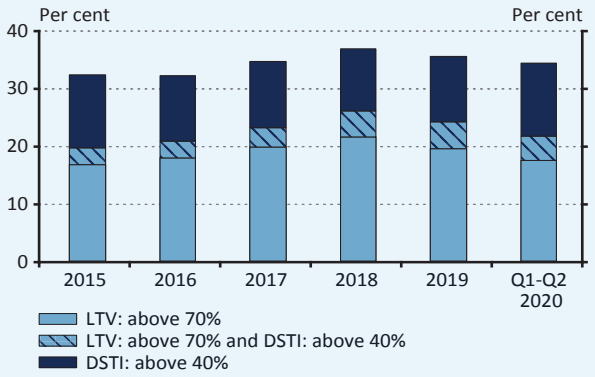
Chart 13
The DSTI distribution of newly disbursed loans by loan type



Note: 5th and 95th percentiles, medians and interquintiles. By contract number.

Source: MNB.

Chart 14
Share of housing mortgages granted near the regulatory limits of borrower-based measures



Note: Distribution based on the number of contracts.

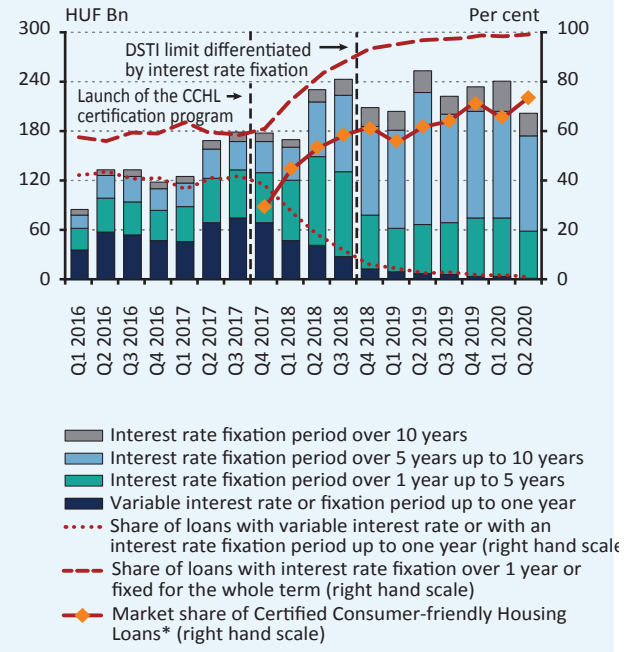
Source: MNB.

The borrower-based measures, effective since 2015, significantly supported that households had enough income buffers to offset the impacts of the pandemic. In the past one and a half years household loans were disbursed close to the limits applicable to the debt-service-to-income (DSTI) ratio at a similar rate as in previous years: since the beginning of 2019, lenders disbursed 16 and 22 percent of the housing loans and consumer loans, respectively, to more highly indebted customers, with DSTI values of 40-60 percent (*Chart 13*). Thus the BBMs did not hinder growth in lending materially, while they substantially reduced the risks of households' over-indebtedness.

The loan-to-value regulation materially reduced the degree of potential credit loss of the coronavirus pandemic. Following a slow increase, the loan-to-value ratio of housing loans started to decline in the past two and a half years. By the end of 2018 the share of housing loans disbursed with an LTV of higher than 70 percent of market value rose to 26 percent, which fell to 24 percent in 2019 and to 22 percent in the first half of 2020 (*Chart 14*). As a result of these developments, no major lending loss may be expected even upon a potential depreciation of real estate prices.

Stability risks caused by the coronavirus pandemic are reduced significantly by the fact that, contrary to the pre-crisis period, lending to households has been denominated in forint, typically with longer interest rate fixation periods in recent years, in compliance with the borrower-based measure framework, without a significant increase in the ratio of loans closer to the limits.

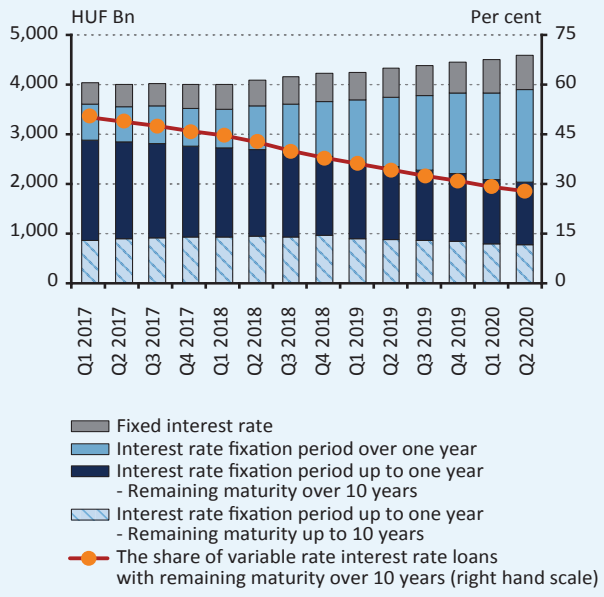
Chart 15
Distribution of new housing loans by interest rate fixation period



*Note: *The market share of the CCHL was calculated among the housing loans with an interest rate fixation period of at least 5 years until October 2018.*

Source: MNB.

Chart 16
Mortgage loan stock by interest rate fixation period



Note: Performing bank loans only.

Source: MNB.

3.2 THE AMENDMENT OF THE DSTI LIMITS IN OCTOBER 2018 ALSO INCREASED HOUSEHOLDS' RESILIENCE

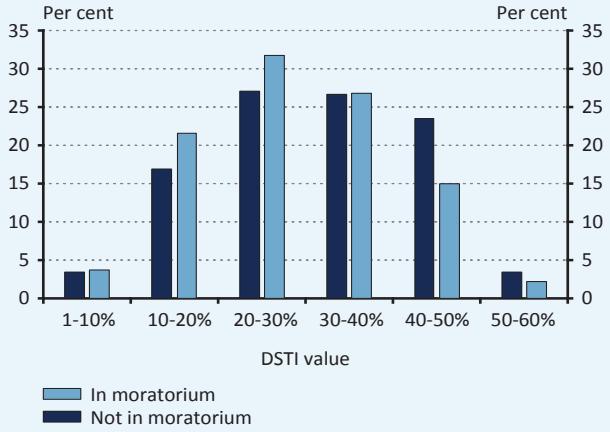
By 2019, within newly disbursed housing loans, transactions with interest rate fixation for 10 years became dominant. The spread of Certified Consumer-friendly Housing Loans (CCFL) with a minimum of 5-year interest rate fixation period and the introduction of the DSTI limits differentiated by interest rate fixation period in October 2018 had a major role in this favourable trend (*Chart 15*). The popularity of loans with longer interest rate fixation periods also offset the potential negative impacts of an increased level of interest rates resulting from coronavirus.

The outstanding portfolio of variable-rate mortgage loans carries gradually decreasing risks. By June 2020, the outstanding variable-rate mortgage loan portfolio with residual maturity longer than 10 years, deemed more risky, declined to 28 percent of the total outstanding household mortgage loan stock, representing a decrease of 11 percentage points compared to October 2018 (*Chart 16*). The MNB encouraged the conversion of outstanding variable-rate loans within one year into fixed-rate loans also by a recommendation (for the details see the chapter presenting the MNB's consumer protection activity).[6]

3.3 THE MORATORIUM ON LOAN INSTALMENTS AND THE APRC LIMIT ARE BOTH AIMED AT MITIGATING HOUSEHOLDS' LIQUIDITY STRAINS

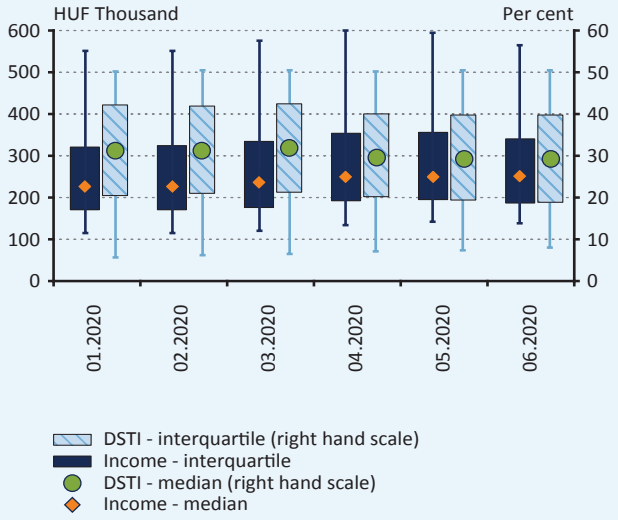
Until June 2020, customers took the moratorium for loans amounting to 50-60 percent of credit institutions' household credit stock. A slightly higher ratio of borrowers in more difficult financial situation, burdened by higher instalment as a percentage of their income, took advantage of the moratorium (*Chart 17*). Considering households with key credit products (mortgage loans, personal loan, hire-purchase loans, car loans) who took the moratorium at least in respect of one of their loans, an estimated 10-15 percent of the borrowers may be deemed vulnerable, which increases their default risk after the expiry of the moratorium. By prescribing high frequency, weekly and other extraordinary reporting obligations and performing questionnaire-based surveys, the MNB monitors household lending developments with particular attention to vulnerable debtors exposed to the impacts of the pandemic to a greater degree.

Chart 17
DSTI distribution of housing loans issued since the introduction of the BBMs in 2015 by the usage of the moratorium (June 2020)



Note: Estimation, distribution by volume. Credit institution sector.
Source: MNB

Chart 18
Distribution of the DSTI values and income used to calculate the DSTI ratio of personal loans issued in 2020



Note: By contract number.
Source: MNB.

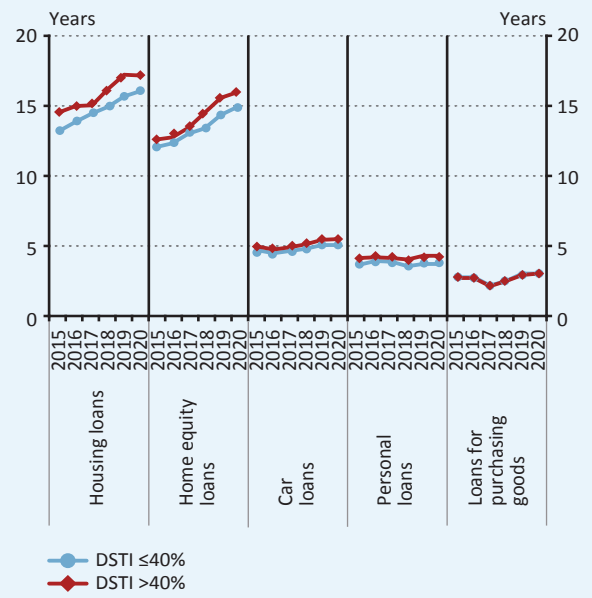
The APRC limit, introduced in respect of unsecured consumer loans, is aimed at bridging households' liquidity strains; however, over the short term the measure caused a decline in the disbursement of personal loans due to the time required for product developments. The lower APRC limit prescribed for unsecured consumer loans may support an increase in the disbursement of personal loans towards the end of the year. As regards key credit risk features of loans disbursed during the period of the preferential APRC, particularly the distribution of the DSTI values, no major difference can be observed compared to loans disbursed before the emergency situation. This implies that despite the decline in the volume of personal lending, its structure has not changed materially. However, a minor shift in the income distribution of new borrowers toward higher income values can be identified (*Chart 18*), which may be attributable to the tightening of banks' lending conditions, primarily in respect of expected minimum income, which is presumably temporary.

3.4 THE MNB ALSO MONITORS ALTERNATIVE ADJUSTMENT TO THE BBMS

The improved effectiveness of DSTI limits is accompanied by a rise in the average maturity of housing loans. The growth of the average maturity of housing loans has continued, which thus exceeded 17 years by mid-2020, while the difference between the average maturity of loans taken with a DSTI of over and below 40 percent rose to two years (*Chart 19*). However, at present the average maturity of even housing loans that are disbursed with the longest maturities cannot be deemed excessive in an international comparison: the average maturity of 17 years substantially falls short of the typical European average maturity of 26 years. Accordingly, the current degree of the lengthening of maturity cannot be regarded as a key risk.

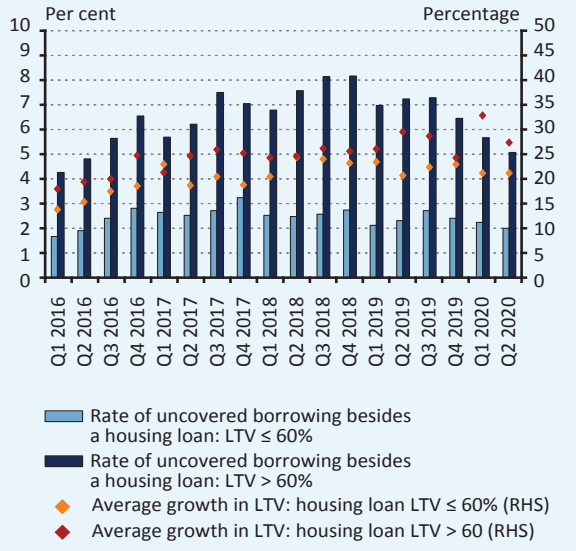
The MNB deems it particularly risky, and thus it called upon lenders in a management circular to refrain from taking into account personal loans as down payment contrary to the intention of the regulatory authority, and to develop procedures to eliminate such practices. Since 2017, about 7-8 percent of housing loans disbursed with a higher LTV of over 60 percent, has been preceded by uptake of personal loans, which may represent additional risk for the borrowers (*Chart 20*). Accordingly, the MNB expects lenders to ensure that their internal audit work plan includes the verification of compliance with expected real down payment requirements as part of the audit of

Chart 19
Average maturity by DSTI value and loan type



Megjegyzés: A 2020-as adatok az első két negyedévre vonatkoznak.
Source: MNB.

Chart 20
The estimated evolution of uncovered loans used for supplementing the down payment



Note: The share of housing mortgage loans by the number of contracts within all housing loan disbursements in the individual LTV categories where the principal debtor also applied for a personal loan within 180 days of the disbursement.
Source: MNB.

the household loan portfolio.[7] The tightening requirements may have also contributed to the fact that by the first half of 2020, the frequency of supplementing down payment declined to 5 percent.

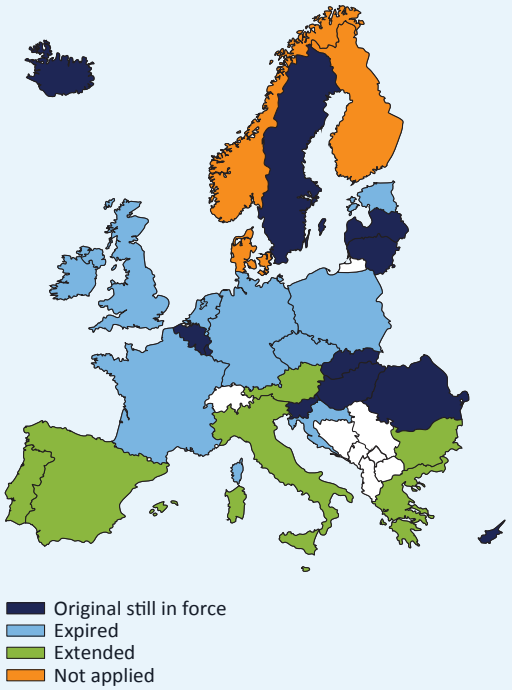
3.5 THE EASING OF BBMS DUE TO THE CORONAVIRUS IS RARE IN INTERNATIONAL PRACTICE

It is typically the Central and Eastern European and the Northern European countries that apply mandatory BBMs. From the beginning of 2019 several countries modified requirements already introduced (Finland, Hungary, Norway, Slovakia, Slovenia). Several other countries decided to extend the previous framework. Portugal introduced LTV and DSTI recommendations, while in Romania the previous DSTI recommendation was replaced by mandatory regulation. Norway, Portugal and Croatia try to mitigate the liquidity strains caused by the coronavirus pandemic by easing the BBMs.

Box 3
International practice of payment moratoria

In order to mitigate the economic effects of the coronavirus pandemic, measures for a moratorium on loan instalments at the sector level were introduced in most countries of the European Union. In 18 of the 24 Member States affected by moratoria, the measures were taken after the moratoria had been implemented in Hungary, often retrospectively, indicating their belated nature. In addition to Hungary, the moratorium was introduced by legislation in 14 EU Member States (including e.g. Austria, Germany, Italy), while uniform practices related to the moratorium on payments were developed as a result of actions by the banking association (e.g. in Greece, Croatia and in the Benelux states). No measures were taken at sector level in 3 Member States; nevertheless, for example in Finland, there were a large number of contract amendments related to payment delays within the framework of individual bank measures.

Practice of payment moratoria in Europe (as of 2 September 2020)



Note: EEA states
Source: MNB

Major differences can be identified in the practice of individual countries in respect of the range of transactions affected and the duration of the moratorium, and the moratorium is also often subject to conditions. Measures related to moratoria were typically introduced for 3 months in the EU core countries (e.g. in Austria, Germany, Italy) and they often cover only either household or corporate loans, or a subset of them (in Austria within the corporate segment only loans of micro enterprises, while in Germany only of household loans). However, in the non-core countries there are also examples of moratoria for 9 and 12 months (e.g. in Romania for 9 months and in Slovenia for 12 months), typically covering both household and corporate loans. In several countries the possibility of the moratorium was subject to conditions: for example in Greece, Croatia and Spain the moratorium was only available upon a verified decline in income, while in Italy the respective transactions were differentiated on a regional basis. Several countries decided to extend the moratorium, which was initially announced for a short period. However, the extensions are typically available only for a narrower range of debtors (e.g. small enterprises, unemployed persons). After the expiry of the moratorium, it will be possible to assess if risks potentially materialised in several countries, which is closely monitored by the MNB.

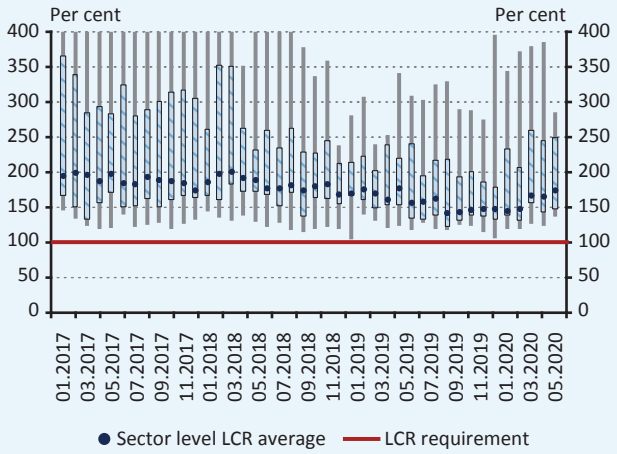
In addition, countries outside Europe also responded to the unfavourable change in the economic environment by offering a payment moratorium. Of the 7 non-European countries under review, the moratorium in Singapore may be deemed to be the most comprehensive: a moratorium of 9 months is provided on households' mortgage loan repayments and on loans to the SME sector, and a 6-month moratorium is in place on life and health insurances. In China and Hong Kong, certain banks provided a moratorium for SME loans, and in the United States and Canada on household loans, and in Australia for both segments; however, it should be noted that in Canada instalments include compound interest.

In the light of international practices, the timing of introducing the payment moratorium in Hungary was adequate and it covered a wide range of sectors. In line with the MNB's proposal, the moratorium on loan instalments in Hungary is in effect between 19 March to 31 December 2020, slightly exceeding 9 months, based on the relevant Government decree passed on 18 March and later replaced by Act LVIII of 2020. The moratorium must be applied by lenders on a mandatory basis to loans already disbursed to households, enterprises, financial corporations and investment funds, without examining eligibility criteria; however, clients may opt out of the moratorium and continue paying the instalments in accordance with the contract.

4 Basel liquidity and funding instruments

The banking sector's liquidity position remains stable, although before the coronavirus banks met the liquidity coverage ratio (LCR) requirement with gradually decreasing buffers. After the onset of the coronavirus, liquidity buffers increased significantly, mostly as a result of the MNB's liquidity-enhancing measures; therefore banks have sufficient liquid assets to satisfy potential surplus liquidity demand caused by the pandemic. The vast majority of banks already now would be able to comply with the requirement on the net stable funding ratio (NSFR) supporting the stable funding of institutions over a horizon of one year, which will enter into force at EU level on 28 June 2021. Adjustment is required only at a few smaller institutions.

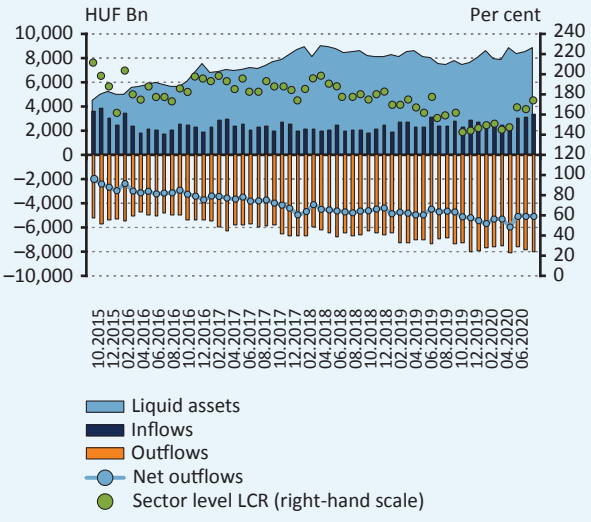
Chart 21
Institutions' LCR levels



Note: The first and ninth decile, first and third quartile values and averages are represented. Without mortgage banks and building societies.

Source: MNB.

Chart 22
Developments in LCR components on a sectoral level



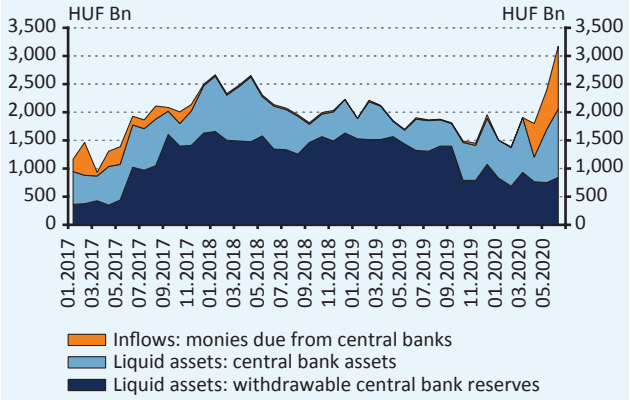
Source: MNB.

4.1 BANKS FACED THE PANDEMIC IN A STABLE LIQUIDITY POSITION

Although the level of liquidity coverage ratios (LCR) showed a decreasing trend until the first quarter of 2020, the banking sector had abundant liquidity reserves at the onset of the pandemic. The LCR, prescribed at a minimum level of 100 percent, stood at 147 percent at the end of 2019 and at 173 percent in June 2020 on the banking sector's average (*Chart 21*). Until the onset of the coronavirus, a slightly decreasing trend was observed compared to 2017-2018, which can be seen as normal in the cyclical situation preceding the coronavirus and during a pick-up in lending. The decrease was mostly attributable to a trend growth in outflows and the temporary effect of the outflow of deposits in the summer and autumn of 2019, caused by the introductions of the Hungarian Government Security Plus (MÁP+) scheme (*Chart 22*). However, the volume of the banking sector's liquidity buffers remained safe; the coronavirus pandemic has hit the banks in a stable liquidity position, which was further improved by the central bank measures.

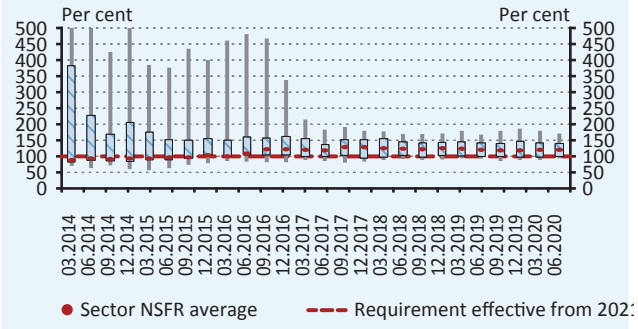
The central bank measures, aimed at strengthening banks' liquidity position during the coronavirus pandemic, led to an increase in the LCR. In order to offset the uncertain financial situation resulting from the pandemic and the unfavourable effect of the moratorium on liquidity, the MNB took a number of liquidity-enhancing measures in spring 2020. Since liquidity risks related to the coronavirus pandemic have not materialised yet, banks' liquidity situation has not deteriorated significantly either; nevertheless, the MNB's measures had a positive effect on banks' LCR level (*Chart 23*). Although the collateral value of central bank eligible assets cannot be taken into consideration automatically as liquid assets, by extending the range of eligible collateral for central bank operations to corporate loans, the LCR increases upon pledging corporate loans for the MNB with the simultaneous

Chart 23
Exposures to central banks taken into account in LCR



Source: MNB.

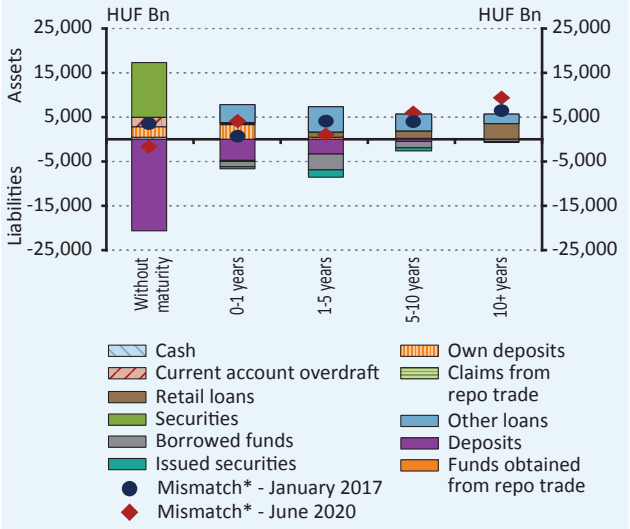
Chart 24
Development of institutions' estimated NSFR



Note: 10th, 25th, 75th and 85th percentiles and the weighted average. Estimate according to the available data reporting based on the Basel NSFR calculation.

Source: MNB.

Chart 25
Maturity mismatch of the banking sector (June 2020)



*Note: particular balance sheet items. Due to their liquidity, securities are stated in the perpetual category. *Assets minus liabilities in a given maturity category.*

Source: MNB.

release of government securities (change of collateral). Furthermore, due to the lifting of reserve requirements, the entire account balance held at the MNB became a liquid asset, and contrary to the overnight MNB deposit, regarded as a liquid asset, the newly introduced 1-week MNB deposit is taken into consideration as an inflow, which led to a minor growth in LCR, despite the identical weight of 100 percent.

4.2 THE INTRODUCTION OF THE NSFR IN SUMMER 2021 IS UNLIKELY TO REQUIRE MAJOR ADJUSTMENTS

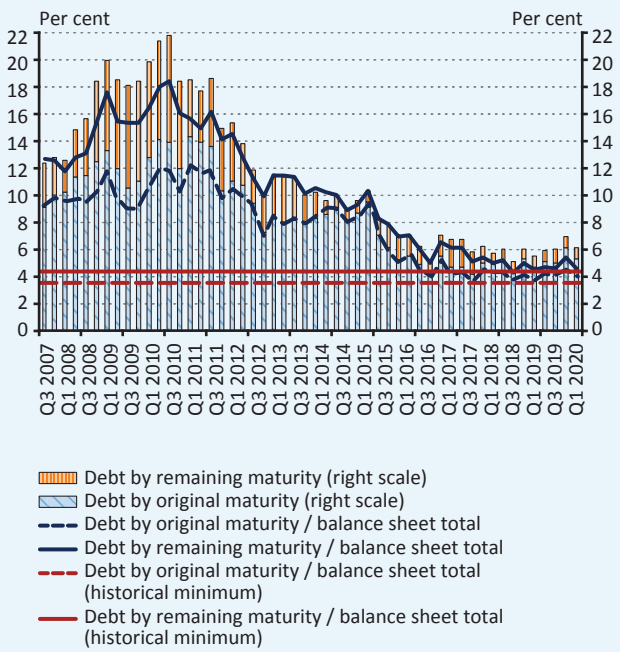
Compliance with the requirement on the net stable funding ratio (NSFR), entering into force across the EU in June 2021, could be almost fully achieved even now. The NSFR expects the holding of adequate volume of stable funds compared to institutions' assets requiring stable funding, thereby reducing the maturity mismatch. The majority of Hungarian banks, with the exception of a few smaller institutions and mortgage banks, fulfil the 100 percent minimum requirement already now (*Chart 24*), with an average of 122 percent. As the final EU regulation is mostly seen as an easing compared to the Basel standards, the calculation based on the Basel requirement may be regarded as a conservative estimate for the value of the indicator. Based on this, the introduction of the requirement is unlikely to necessitate a major adjustment.

Risks stemming from the maturity mismatch in banks' balance sheet are insignificant. The maturity mismatch between the asset and liability sides of banks' balance sheet comes with the maturity transformation by banks, during which loans with longer maturities are extended mostly from short-term liabilities (e.g. deposits). The absence of maturity match carries risks as a matter of course, since upon the failure to renew short-term liabilities or the withdrawal of deposits, banks liquidity position may deteriorate to such an extent that they are forced to sell longer-term assets with a loss. Maturity mismatch in the Hungarian banking sector deteriorated slightly in recent years (*Chart 25*) primarily due to a rise in sight deposits; however, the risk of mass deposit withdrawal is substantially mitigated by the existence of the deposit insurance. The introduction of the NSFR is likely to contribute to the further mitigation of risks stemming from maturity mismatch or to keeping them at a constant level. However, funding risks unique for Hungary will continue to exist, which the MNB needs to address within its macroprudential competence.

5 Instruments mitigating external vulnerability

The MNB's package of financing regulations hinders the penetration of funding practices undesirable in terms of financial stability. The banking sector complies with certain effective requirements aimed at different sub-risks with adequate reserves, and thus they do not hinder lending activity expected to pick up following the pandemic. In order to manage the potentially increasing funding risks due to the coronavirus pandemic on a preventive basis, in March 2020 the MNB temporarily – until September 2020 – tightened the foreign exchange funding adequacy ratio (FFAR) and the foreign exchange coverage ratio (FECR), which did not require any material adjustment by the banking sector.

Chart 26
Development of the short-term debt of the banking system



Note: The data for 2020 Q2 reflects the status of May. Historical minimums are calculated from 1998 Q1.

Source: MNB

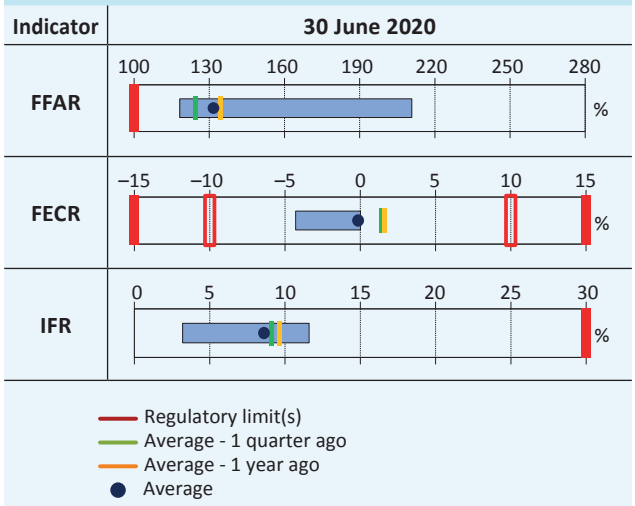
5.1 TEMPORARY, TIGHTER REGULATIONS FOR PREVENTIVE PURPOSES DUE TO THE CORONAVIRUS PANDEMIC

In order to ensure the stable funding of the banking sector, the MNB tightened the FFAR and FECR requirements at the beginning of 2020. The two regulations were amended with effect from 24 March 2020. In the FFAR the weighting of long-term liabilities to financial corporations was differentiated by maturity, encouraging banks to raise funds with longer maturity. The FECR, and thus the permitted level of the on-balance sheet FX open position as a percentage of the balance sheet total, declined from +/-15 percent to +/- 10 percent. The measures were justified by the uncertainties surrounding the effects of the pandemic on domestic and cross-border financial markets and capital flows, and the potential regulatory responses to these by Member States. However, the uncertainty related to the pandemic has decreased, while potential risks have not materialised or materialised only to a limited extent until now, and the adjustment requirement at system level was low, due to the previous high level of buffers. Accordingly, in September 2020 the MNB restored the regulations to their pre-March status.

5.2 THE EXTERNAL VULNERABILITY OF THE BANKING SECTOR REMAINS LOW BY HISTORICAL STANDARDS

The banking sector's short-term external debt is close to its historic low. Banks' short-term external debt reached its lowest value as a percentage of the balance sheet total in the past twenty years at the end of 2018, which did not change significantly in 2019 (Chart 26). The main contributors to this included the deleveraging after the 2008 crisis, the conversion of household foreign currency

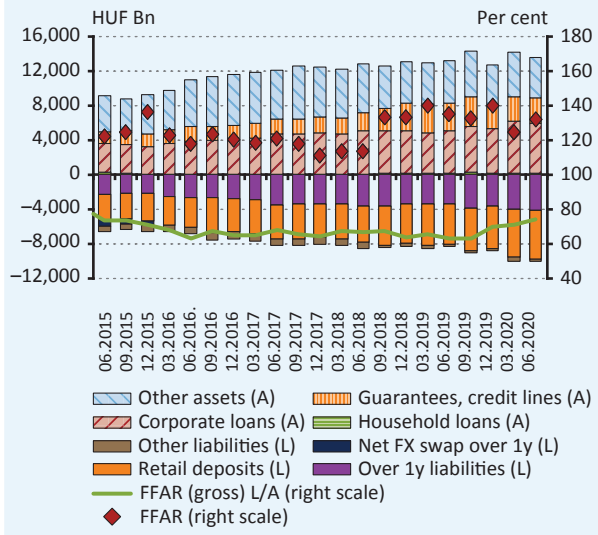
Chart 27
Compliance with the MNB regulations targeting financing risks



Note: Around the averages low and high quartile values. FFAR - Foreign exchange Funding Adequacy Ratio, FECR - Foreign Exchange Coverage Ratio, IFR - Interbank Funding Ratio. In the case of FECR, the double red line indicates the limit effective from 24 March 2020.

Source: MNB

Chart 28
Asset and liability categories requiring and providing stable funding



Note: Unweighted amounts reported in the FFAR.

Source: MNB

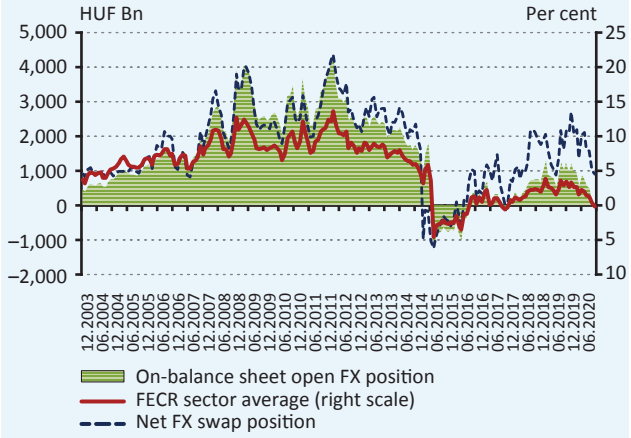
loans into forint and the MNB's regulatory efforts. No major change occurred in this in the first half of 2020 either, even under the slightly higher values registered in the first quarter of 2020. While previously growth in household and corporate lending was not accompanied by an excessive shift to external funds, as financial market circumstances became uncertain in 2020 several banks temporarily moved towards funding subject to more frequent renewal, primarily in the form of intra-group transactions.

5.3 FUNDING TO THE BANKING SYSTEM IS PROVIDED IN A SUSTAINABLE STRUCTURE AND THE PANDEMIC LEFT IT BROADLY UNCHANGED

The banking sector complies with certain elements of the temporarily tightened set of macroprudential instruments reducing risks of external vulnerability and capturing different aspects of the funding risks with a safe level of buffers (*Chart 27*). The Hungarian banking sector on average and the vast majority of the banks are at adequate distance from the established regulatory limits tightened temporarily recently due to the coronavirus pandemic, and thus the set of instruments works as a sustainable, preventive requirement not hindering the operation of universal banks primarily focusing on lending to customers.

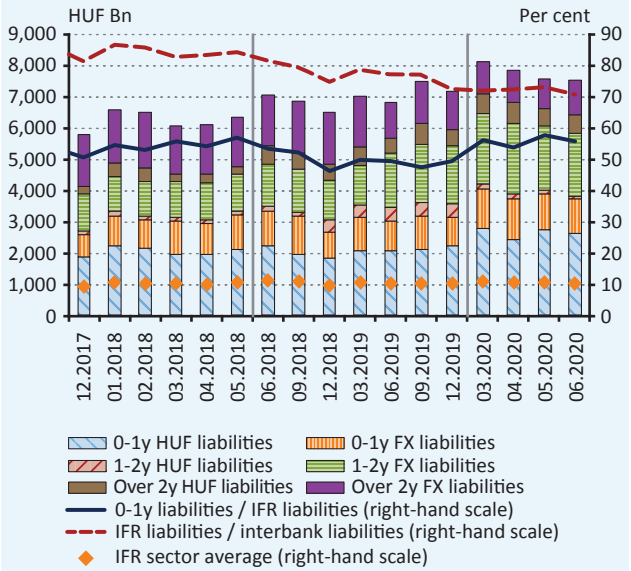
Corporate foreign currency loans and off-balance sheet liabilities have a key role in the development of the foreign currency maturity match. Since 2016, outstanding foreign currency loans to non-financial corporations and the related guarantee and credit line commitments have increased gradually and contributed to the increase in the stable foreign currency funding requirement under the FFAR (*Chart 28*). Due to the amendment of the FFAR in 2018, the stable funding requirement of off-balance sheet liabilities decreased substantially in the regulation, and thus this did not prompt banks to perform strong adjustment on the liability side, and the volume of excess buffers increased substantially. Banks financed the increase in assets since then primarily by corporate customer deposits or foreign currency liabilities with a maturity of over one year. The tightening implemented due to the pandemic halved the volume of buffers at the sector level while generating no extra adjustment requirement. The surplus of stable foreign currency funds was able to rise at several banks after the tightening even under these new conditions, primarily as a result of the decline in foreign currency loans granted due to the pandemic.

Chart 29
On-balance sheet open FX position and net FX swap position



Source: MNB

Chart 30
Funds of the banking system originated from financial corporations targeted by IFR



Note: Gross unweighted liabilities. Before June 2018 estimated numbers with monthly periodicity, since June 2018 data by quarterly IFR reports, since March 2020 data by monthly IFR reports. Share of IFR funds equal to funds targeted by the IFR relative to all funds from financial corporations. Ratio of 0-1 year liabilities within IFR liabilities.

Source: MNB.

At the level of the banking sector, essentially an on-balance sheet currency match developed. From the end of 2019, the FECR at sector level, which used to stand relatively steady at 3 percent, started to decline and fell close to 0. The decline in foreign currency assets had a major role in this. The sectoral view masks a broad diversity. The ratio of banks with surplus foreign currency assets fell to a historic low to 30 and 50 percent, respectively, in terms of their number and balance sheet total. Accordingly, a positive FECR is more a characteristic of institutions with a higher balance sheet total, associated with increasing growth in a few larger, internationally active credit institutions' assets. The use of foreign exchange swaps for funding purposes on an individual basis is still typical; however, the banking sector's net foreign currency raising position is rather for income generating purposes (*Chart 29*). On the whole, the tightening in March did not require any major adjustment, with the exception of a few banks operating with a business model focusing on carry trade transactions. It is still possible to widen the on-balance sheet open position to a safe degree if lending necessitates it.

Banks increase their funds from financial corporations to a sustainable extent and along favourable structural changes. Dependency on funds from financial corporations has been steadily low for several years. Accordingly, the majority of institutions – including large banks as well – are still far from the maximum level stipulated by the interbank funding ratio (IFR) requirement. Until the end of 2019, within funds from financial corporations the ratio of safer forint funds not targeted by the IFR, such as mortgage bond-based funds, and of funds with a maturity of over one year, increased (*Chart 30*). However, in the first half of 2020, the ratio of short-term funds received from special institutions, such as the MNB, soared as a result of the coronavirus pandemic.

Box 4
Backtesting of the MNB's liquidity and funding regulations

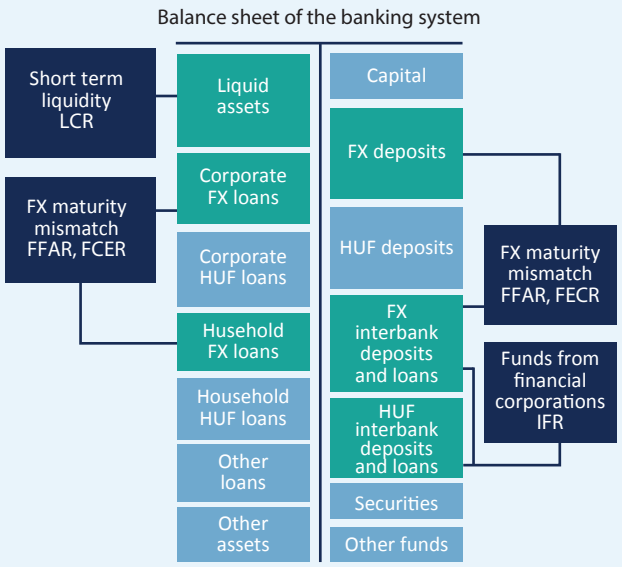
In view of the lessons learnt from the financial crisis, after 2012 the MNB initiated and implemented several regulations addressing systemic funding risks, which reduced the risks to banks' solvency and significantly increased the financial system's resilience to such risks. The foreign exchange funding adequacy ratio (FFAR), the foreign exchange coverage ratio (FECR), the interbank funding ratio (IFR) and the liquidity coverage ratio (LCR) - the latter implemented across the EU - function as a set of preventive instruments and they may be able to prevent a build-up of systemic liquidity and funding risks through their complex on-balance sheet and off-balance sheet effects, and provide adequate shock-absorbing capacity at the level of individual banks and of the banking sector.

In view of the major role of the risks reduced by these instruments in the previous crisis, in order to assess the efficiency of those, the MNB examined how these regulations would have affected financial stability, had they been implemented prior to the 2008 crisis.

To this end, bank adjustment methods were defined and ranked based on feasibility and costliness. Banks were permitted to adjust relying on the adjustment ranked first, up to reaching their relevant on-balance sheet limits and then switched to the next adjustment method in the ranking. The adjustment lasted as long as they were able to improve their regulatory compliance or until they complied with the regulatory requirements.

The 13 large banks examined were permitted to follow two adjustment scenarios during the backtesting. In the first scenario unlimited liability side adjustment was permitted, through converting their existing funds into foreign currency, prolonging them or by raising new long-term foreign currency funds. In the second scenario, in addition to the limited liability side adjustment limiting the raising of new long-term foreign currency funds, assets side adjustment, affecting the outstanding foreign currency loans to households, became necessary.

Effects of the MNB's liquidity and funding regulations on the bank balance sheet

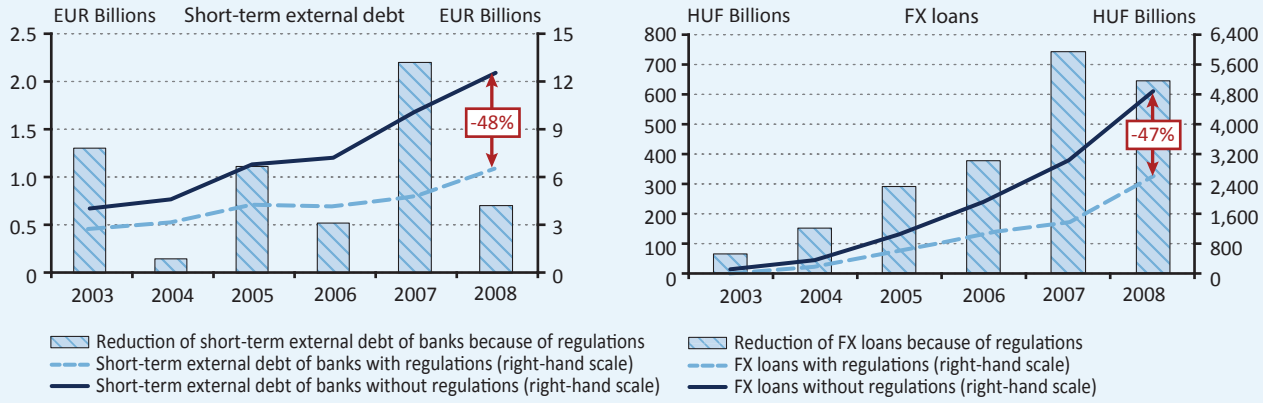


Source: MNB

The banks examined were able to achieve full compliance upon liability side adjustment, while upon liability and asset side adjustment partial compliance was achieved in the case of a few banks. The test also proved that banks would have been forced to perform the greatest adjustment by the FFAR, and upon an asset side adjustment this was the requirement they would have been able to comply with to the smallest degree.

The introduction of the regulations before the crisis would have led – in addition to increased stability at the level of individual banks – to lower vulnerability of the banking sector due to the strengthening of the proper maturity and currency match, to substantially lower short-term external debt of banks, and through that to lower external vulnerability of the national economy. Upon asset side adjustment, the decline in short-term external debt already mentioned would have been supplemented by a major reduction in outstanding foreign currency loans. As a result of the regulation, in the upward phase of foreign currency lending the volume of outstanding foreign currency loans should have been reduced by 5-9 percent of the balance sheet total on average. In the knowledge of the materialised credit path, the regulation would have been able to crowd out a large volume of foreign currency loans.

Effects of the regulations on credit institutions' short-term external debt and outstanding foreign currency lending to households upon implementation in 2003 and maintenance thereafter



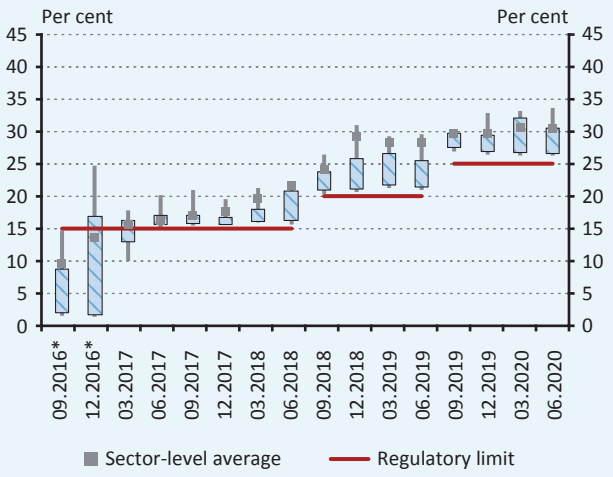
Note: Reduction of the stock in a given year shows how much adjustment need would have remained in the given year in the case of introduction in 2003. Lines indicate cumulated values. Short-term external debt would have declined to the same degree under the first and second scenario. The effect on outstanding foreign currency lending to households would have materialised only in the second scenario, when the raising of new long-term foreign currency funds was limited.

Source: MNB

6 Mortgage Funding Adequacy Ratio

Pursuant to the amendment to the mortgage funding adequacy ratio (MFAR) requirement effective from 1 October 2019, at least 25 per cent of mortgages need to be financed by banks from longer-term mortgage-based funds, and the quality requirements related to eligible funds were also tightened. The sector's participants adjusted smoothly to these changes. The introduction and gradual tightening of the MFAR regulation efficiently supported the development of the domestic mortgage bond market, in addition to increasing the ratio of stable forint funds. In order to mitigate the effects of the coronavirus pandemic, the rules applied in the calculation of the MFAR to restrict cross-financing were suspended temporarily.

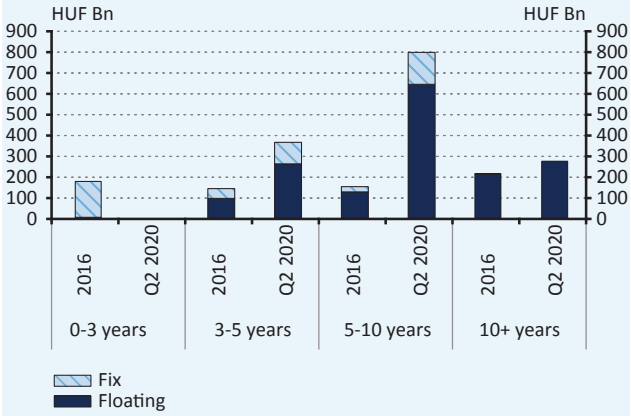
Chart 31
Institutions' MFAR levels



*Note: First and ninth decile values and lower and upper quartile values. *Estimation only for large banks.*

Source: MNB.

Chart 32
Outstanding amount of mortgage bonds by maturity and type of interest at the end of 2016 and 2020 Q2



Source: MNB.

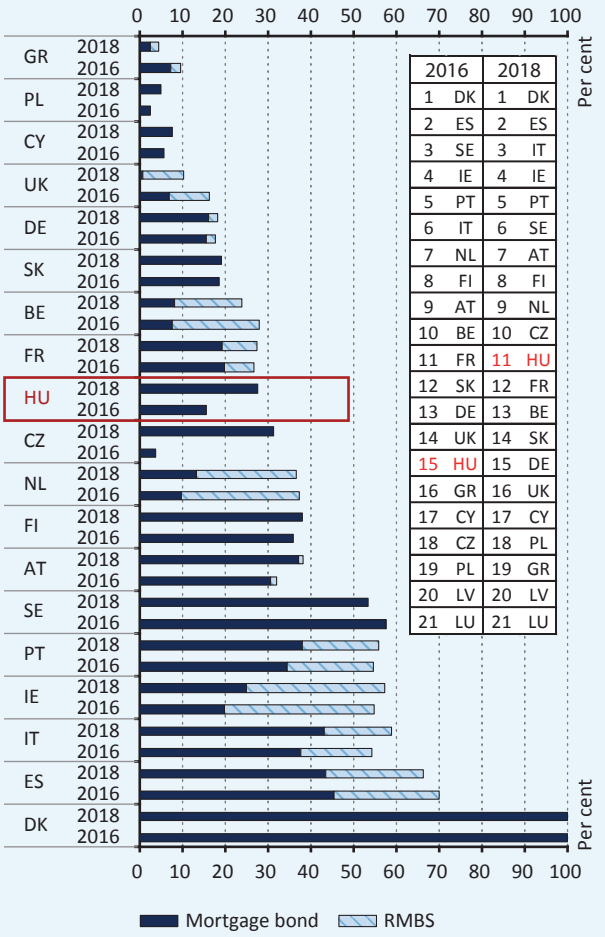
6.1 BANKS SMOOTHLY ADJUSTED TO THE AMENDMENT OF THE MFAR REGULATION EFFECTIVE FROM 1 OCTOBER 2019

The expected minimum level of the mortgage funding adequacy ratio (MFAR), effective from 1 April 2017, rose to 25 percent from 1 October 2019, to which banks have adjusted successfully (*Chart 31*)**.** In order to gradually reduce the banking sector's forint maturity mismatch, the expected level of the ratio rose from the initial 15 percent by 5 percentage points both in 2018 and 2019. The adjustment was also facilitated by the MNB's mortgage bond purchase programme implemented in 2018, as a result of which the banking groups that included mortgage banks issued a large volume of mortgage bonds already in 2018. At present most banks have a ratio of 25-30 percent. The buffers of banks that comply with the regulation through refinancing are typically lower than those of banking groups issuing mortgage bonds. As of 1 October 2019 the quality requirements related to eligible funds also changed: expected maturity increased from two to three years, and credit rating by an external rating agency must be also obtained for the mortgage bond, the issuer or the guarantor. Furthermore, in order to increase the liquidity of the market, the amended regulation exempts mortgage bonds held by bank distributors for market making purposes up to 10 percent of the respective series, not exceeding HUF 3 billion, from the requirement discouraging possession by banks.

6.2 THE MNB'S MEASURES CONTRIBUTED TO THE DEVELOPMENT OF THE HUNGARIAN MORTGAGE BOND MARKET

Following the announcement of the MFAR regulation the Hungarian mortgage bond portfolio started to grow, and the distribution of the issued mortgage bonds by maturity also changed (Chart 32). The regulation and the MNB's mortgage bond purchase programme fostered the deepening of the

Chart 33
Mortgage bond and residential mortgage-backed securities (RMBS) holding as a percentage of retail mortgage loans in the countries of the EU and in the United Kingdom

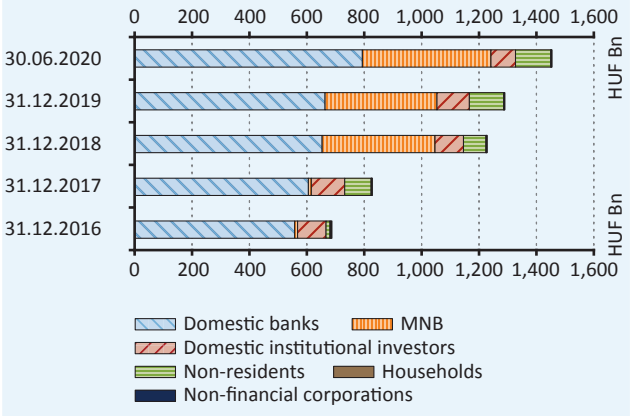


2016	2018
1 DK	1 DK
2 ES	2 ES
3 SE	3 IT
4 IE	4 IE
5 PT	5 PT
6 IT	6 SE
7 NL	7 AT
8 FI	8 FI
9 AT	9 NL
10 BE	10 CZ
11 FR	11 HU
12 SK	12 FR
13 DE	13 BE
14 UK	14 SK
15 HU	15 DE
16 GR	16 UK
17 CY	17 CY
18 CZ	18 PL
19 PL	19 GR
20 LV	20 LV
21 LU	21 LU

Note: To total residential loans on lender's books at the end of the period. The definition of residential loans can vary somewhat across EU countries, depending on the collateral system and the purpose of the loans.

Source: European Mortgage Federation.

Chart 34
Hungarian mortgage bonds by owner sectors



Source: MNB.

mortgage bond market, and as a result banks became more active in the area of issuance: the outstanding amount of mortgage bonds in circulation rose from HUF 679 billion at the end of 2016 to HUF 1,440 billion by the end of June 2020. Simultaneously with this the maturity structure of the portfolio also changed: by the end of June 2020 most of the mortgage bonds belonged to the category of 5-10 years, while the outstanding amount with original maturity below 3 years has practically disappeared as a result of the minimum maturity requirement defined in the MFAR regulation. In addition, the overwhelming part of the mortgage bond outstanding amount, i.e. 82 percent, were fixed-rate bonds at the end of June 2020, which also supported the spread of fixed-rate household mortgage loans.

As a result of the MNB's measures, the Hungarian mortgage covered bond market entered the mid-range of the EU based on its relative size (Chart 33). In 2016 the Hungarian mortgage bond market was one of the smallest in the EU compared to outstanding residential mortgage loans, while by the end of 2018 it joined the mid-range. Of the countries of the region, similar growth can be observed in the Czech Republic and Poland, although in the case of the latter the size of the market as a percentage of mortgage loans was rather small even at the end of 2018. However, in some of the Northern and Western European countries the ratio of funding by mortgage-backed liabilities is still significantly higher, and thus there remains room for the deepening of the mortgage bond market.

6.3 WITH A VIEW TO MITIGATING THE IMPACTS OF THE CORONAVIRUS PANDEMIC THE MFAR REGULATION WAS MODIFIED

In order to mitigate the effects of the financial market uncertainties accompanying the coronavirus, the rules restricting the possession of mortgage bonds by banks, applied in the MFAR, were suspended from 24 March 2020. Domestic banks are the largest investors in the mortgage bond market, although the ratio of banks' holdings declined compared to 2016, which is mostly attributable to the mortgage bond purchase programme and to the MNB's market entry (*Chart 34*). Since banks' mortgage bond crossholdings do not provide stable funding at sector level, and also increase the risk of contagion among the banks, the discouraging of this also appeared in the amendment of the MFAR regulation of October 2018. However, it became necessary to suspend temporarily the rules restricting the possession of mortgage bonds by banks in order to mitigate the effects of the financial market uncertainties caused by the pandemic, to support long-term fund raising by banks and to reduce funding costs.

Box 5
EU regulatory developments related to covered bonds

The development of the international mortgage bond markets may gain new momentum from the legislative changes in the EU. One of the basic pillars of the EU's action plan aimed at creating a capital market union is the elaboration of the harmonised regulation of covered bonds, which also supports the financial stability objectives. Previously, the Commission found that the development of harmonised detailed rules for covered bonds fosters the financing of the economy, and at the same time it provides investors with wider and safer investment opportunities and helps maintain financial stability. This is due to the fact that covered bonds serve as important, long-term sources for funding the EU economy and as elements of high stress-absorbing capacity of credit institutions' funding strategy. In addition, the covered bond market offers stable and cost-efficient source of finance to credit institutions, which thus can extend more affordable mortgage loans to households and corporations.

The harmonised framework of covered bonds creates a uniform asset type at the EU level. The regulatory package adopted on 27 November 2019, aimed at the harmonisation, comprises the Covered Bond Directive and the amendment of the CRR. The Directive lays down the cornerstones of the Member States' regulations, such as issuance by credit institutions, the dual recourse mechanism, the bankruptcy remoteness requirement, the requirement of the segregation of cover pools, the detailed rules of public supervision, administrative penalties and measures. However, apart from this, it provides the Member States' legislator with room for manoeuvre in several cases. The amendment of the CRR stipulates that only those covered bonds can benefit from the preferential risk weighting during the calculation of the capital requirement, in respect of which an overcollateralisation of 5 percent, or upon the fulfilment of certain conditions, of at least 2 percent is also applied.

The new elements of the covered bond legislative package compared to the Hungarian legislation

Directive on covered bonds	+	CRR2
New elements compared to the domestic legislation • **Cover assets** – assets under Article 129 of the CRR and regulated under the directive • **More detailed investor information** – risk assessment, characteristics of the cover assets • **Liquidity buffer (180 days)** – to cover the net liquidity outflow of the covered bond programme • **Public supervision** – permission for a covered bond programme always required • **Label** – European Covered Bond, European Covered Bond (Premium)		**Article 129** • **Over-collateralisation** 5% as a general rule, but 2% at least
Options of the Member States • Collateral assets located outside the Union • Composition of the cover pool • Intragroup pooled covered bond structures • Rules on the cover pool monitor • Extendable maturity structures		

Source: MNB

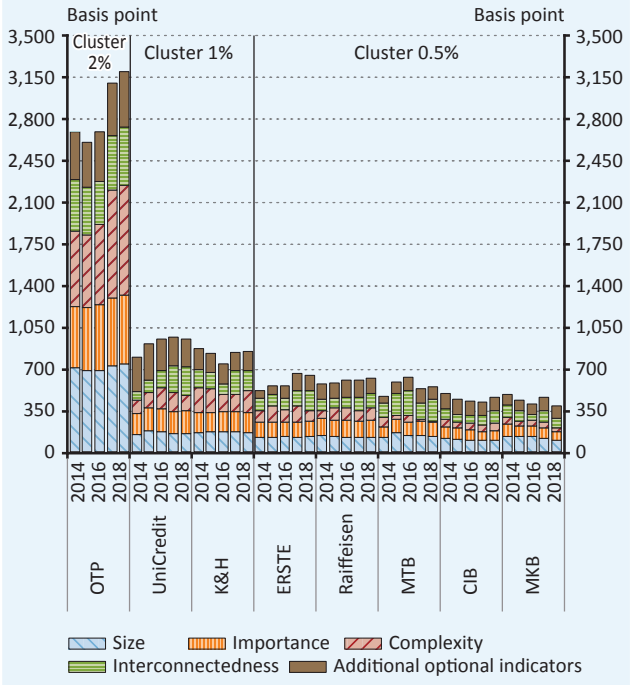
The Hungarian regulation largely complies with the provisions of the Directive, but a few new elements also appear in respect of the requirements related to covered bonds. The largest change compared to the Hungarian regulation is represented by the requirement of the cover pool liquidity buffer, pursuant to which the cover pool liquidity buffer must cover the maximum cumulative net liquidity outflow of the covered bond programme over the next 180 days. Member States must implement the Directive in the domestic legislation by 8 July 2021, and the amended national regulations and the provisions of the modified CRR must be applied from 8 July 2022, at the latest. When implementing the Directive, decisions will have to be made in respect of the Member States' options and it will be also necessary to revise the effective legislation.

The adoption of the legislative package may exert a positive impact on the Hungarian mortgage bond market. The harmonised regulation, aiming to develop a more integrated covered bond market at EU level, may support further development of the Hungarian mortgage bond market. The uniform requirements may contribute to higher activity of international investors in the Hungarian mortgage bond market, which would also support the creation of the active market and diversified investor base, also targeted by the MFAR regulation.

7 Capital buffer for other systemically important institutions

Following the review performed in 2019, the MNB did not change the range of the Hungarian Other Systemically Important Institutions (O-SII) and their ultimate buffer rates, valid from 2020 and pre-announced in previous years. However, in view of the extraordinary circumstances caused by the coronavirus pandemic, the MNB decided to release the buffers in full on a temporary basis from 1 July 2020. Institutions will be required to recognise the buffers once again from 2022 gradually, in three years. In retrospect it can be stated that the gradually increasing buffer rates did not represent any material constraint in 2019 for the credit expansion of the banking sector operating with a stable capital position. Capital released as a result of the temporary lifting of the buffer requirements support the strengthening of the banking sector's shock-absorbing capacity and the maintenance of its lending capacity.

Chart 35
Changes in the scores of other systemically important institutions (between 2014 and 2018)

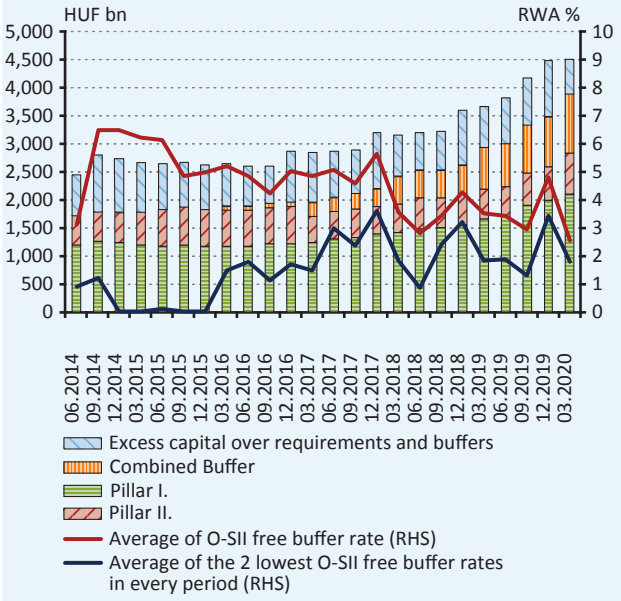


Note: Final O-SII buffer rate clusters from 2024.
Source: MNB

The set of other systemically important institutions have remained unchanged, even after the regular annual review. Upon the identification of Other Systemically Important Institutions (O-SII) headquartered in Hungary in 2019, the scores representing systemic importance were obtained as the weighted averages of ten core indicators and five supplementary indicators.[8] The scores calculated as a result of the identification (Chart 35) continued to exceed the 350-basis point threshold in the case of eight banking groups. The risk developments did not justify the amendment of the ultimate O-SII buffer rates envisaged in 2016.

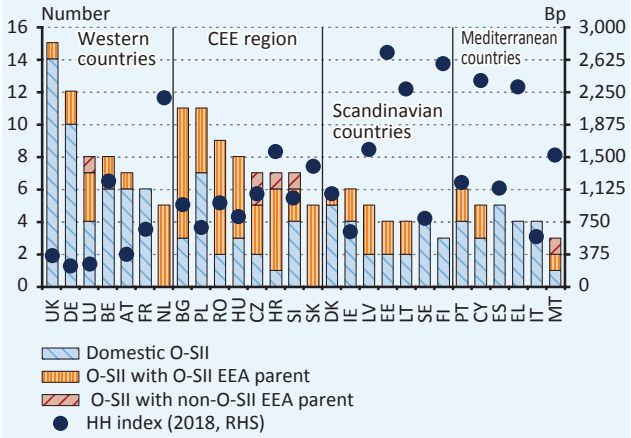
In view of the extraordinary circumstances caused by the coronavirus pandemic, the MNB released the O-SII capital buffers. The extraordinary economic circumstances unfolding as a result of the coronavirus pandemic called for the mitigation of the potential systemic risks stemming from the negative impacts of the credit market, which may also be supported by the reduction in capital requirements. In view of this, the MNB decided to temporarily release O-SII capital buffers prescribed in order to maintain financial stability, pursuant to which O-SII capital buffer rates declined to 0 percent from 1 July 2020. Temporary buffer rates will increase on the build-up path by one-quarter of the anticipated final rate annually in 2022 and 2023, and they will reach the planned ultimate level in 2024 (Chart 35). The release supports the maintenance of Hungarian credit institutions' lending capacity, and thereby their role in financing the real economy.

Chart 36
The evolution of the O-SII banks' free buffer rates



Source: MNB.

Chart 37
International comparison of the number of O-SII institutions (2019)

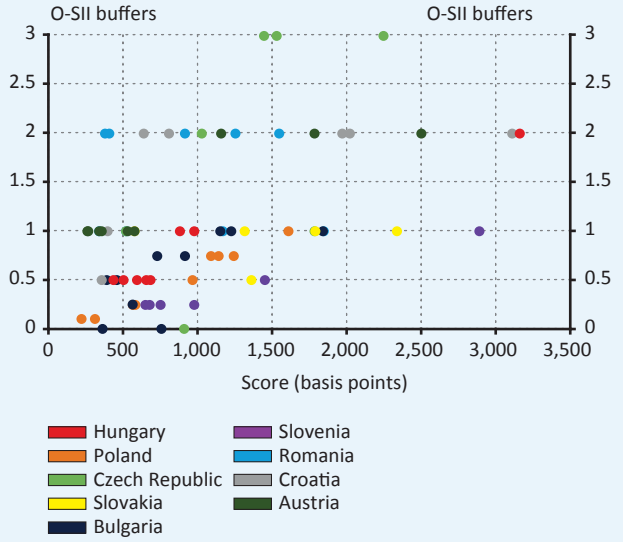


Source: MNB, ESRB

The current scores measuring systemic importance still have not justified the amendment of the ultimate O-SII buffer rates envisaged for 2024. Based on the experiences gained from the past five identifications and measurement of systemic importance, the annual change in the scores did not cause any realignment in the relative position and systemic importance of any O-SII of a degree that would call for amendment of the 2024 target values of the 2, 1 and 0.5 percent buffer rate established for 2020 or of their build-up path; those may still be deemed proportional to the systemic importance (*Chart 35*). The MNB may modify the target values of the buffer rates during the annual regular reviews as necessary, based on the changes in credit institutions' importance in terms of systemic risk.

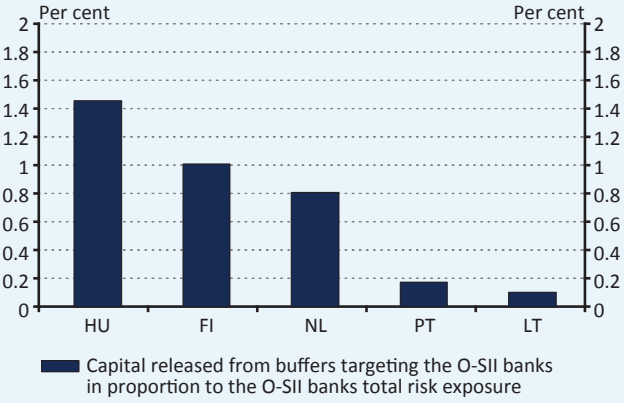
The capital position of domestic O-SIIs is stable; in the present situation buffers built up gradually support the maintenance of lending activity and loss-absorbing capacity. Based on the total risk exposure values of 31 December 2019, the group-level aggregate capital buffer of the eight O-SII institutions identified as systemically important, calculated with the buffer rates set for 2020, is HUF 359 billion. In retrospect, the gradual increase in the buffers did not necessitate any adjustment that would materially restrict aggregated lending activity. On average, excess buffers of O-SII banks as a percentage of the total risk exposure materially declined in recent years; however, this trend may be identified individually only under major variance both in terms of time and the cross-section of O-SII banks (*Chart 36*). However, in the first quarter of 2020, the increase in buffers (before the release) and growth in the risk exposure value already substantially narrowed institutions' excess buffers.

Chart 38
Final O-SII buffer rates in the CEE region



Note: Czech Republic applied SyRB buffer to O-SII institutions.
Sources: MNB, ESRB.

Chart 39
Capital released from buffers targeting the O-SII banks in proportion to the O-SII banks total risk exposure



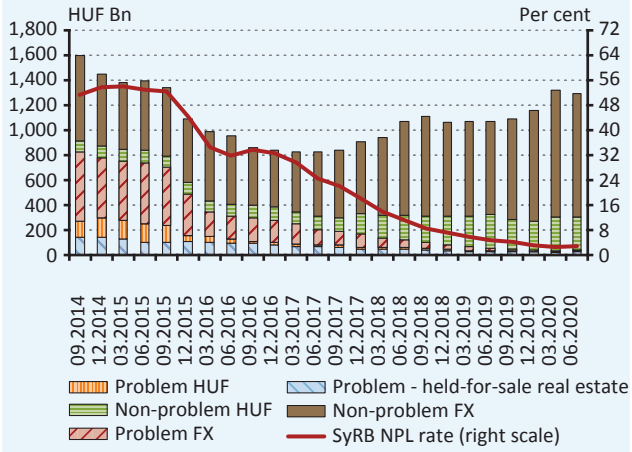
Sources: MNB measure based on member states announcements.

The ultimate domestic O-SII buffer rates may be deemed proportional to systemic importance in the CEE region. The number of O-SIIs identified in the EU – including also the EFTA members – during the 2019 review is close to two hundred. The number of identified domestic institutions is close to the average of the CEE region and it is also proportional to market concentration (*Chart 37*). Some of the CEE countries (e.g. HR, RO, AT) may be deemed stricter, since they prescribed for the banks reaching scores measuring lower importance higher O-SII buffer rates than the ultimate Hungarian rates, while elsewhere it was just the opposite: lower or identical buffer rates were prescribed even for the higher scores (*Chart 38*). As a result of the pandemic, only a few Member States eased the O-SII buffer rate requirements or the SyRB rates targeting O-SII banks more strictly (Chart 39). Of the countries of the region Austria regularly assesses the need to release buffers. Elsewhere (FI, NL) only part of the buffers was released, or the transitional period connected to its introduction was extended (PT, LT).

8 Systemic risk buffer

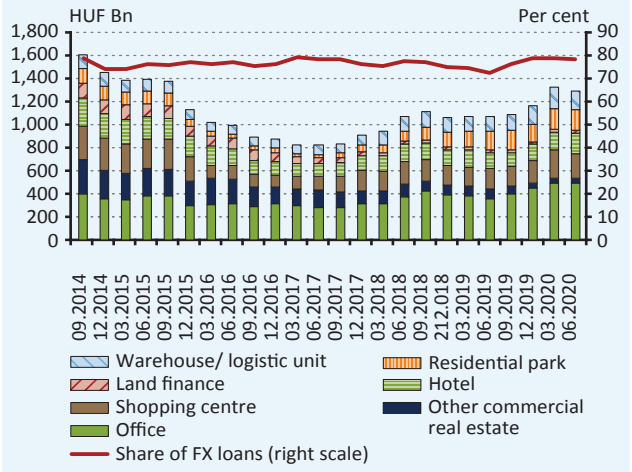
The MNB applied the systemic risk buffer (SyRB) to manage the default risks of project financing loans secured by commercial real estate. Owing to the favourable trends in commercial real estate markets and incentivized by the capital buffer, in recent years the banking sector's systemic risks stemming from problem commercial real estate exposure fell to a low level, and from 1 July 2019 none of the banks was required to maintain a SyRB. In autumn 2019, the MNB revised the requirement in order to ensure that the capital buffer prevents more efficiently the build-up of future risks in such a way that upon determining the capital buffer rates not only problem, but also non-problem foreign currency project financing loans are taken into consideration. Although, in line with the preventive nature of the calibration, none of the banks maintained a SyRB from 1 January 2020, the MNB decided not to revise the systemic risk buffers in 2020 in order to mitigate the negative impacts of the potentially increasing ratio of restructurings due to the coronavirus pandemic.

Chart 40
Domestic project loan exposures and held-for-sale real estates



Source: MNB.

Chart 41
Domestic commercial real estate project loan exposures by type of real estate



Source: MNB.

8.1 SYSTEMIC RISKS CONNECTED TO PROBLEM COMMERCIAL REAL ESTATE EXPOSURES FELL TO THE MINIMUM

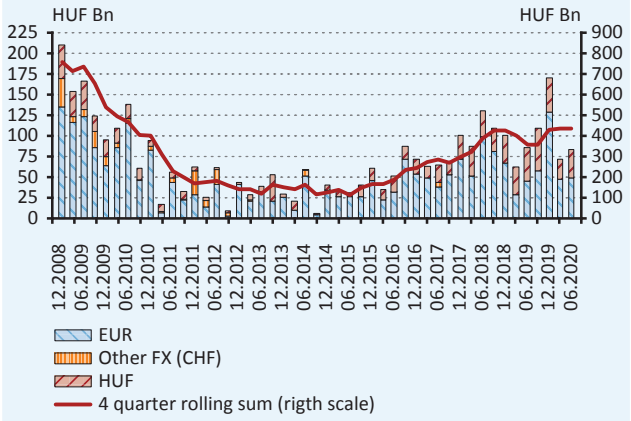
In the second half of 2019, none of the banks had to maintain a systemic risk buffer (SyRB) in connection with problem commercial real estate exposures. While the larger part of the adjustment took place prior to prescribing the SyRB for the first time, the instrument maintained the incentive for balance sheet cleaning thereafter as well. Supported by the favourable market environment, by the end of March 2019 problem portfolios fell to a level that it was not justified to prescribe a capital buffer for any of the banks. Portfolio cleaning has not stopped after this; the size of the portfolio deteriorating the banking sector's profitability and creditworthiness fell well below 5 percent of the total amount, the level deemed acceptable (Chart 40).

8.2 IN 2019, THE MNB TIGHTENED THE SYSTEMIC RISK BUFFER REQUIREMENT ON A PREVENTIVE BASIS

Since 2016, commercial real estate project financing, mostly in foreign currency, has increased dynamically. The boom, primarily under euro funding, was reflected in the financing of office, residential park and logistics buildings (Chart 41). For the time being no financial stability problem has occurred in connection with this; nevertheless, due to the threat of the repeated build-up of systemic risks, intervention was justified on a preventive basis.

In order to prevent an excessive build-up of foreign currency project financing, the conditions of applying the SyRB were modified at the end of 2019. Due to the high ratio and earlier observed fast increase of foreign currency

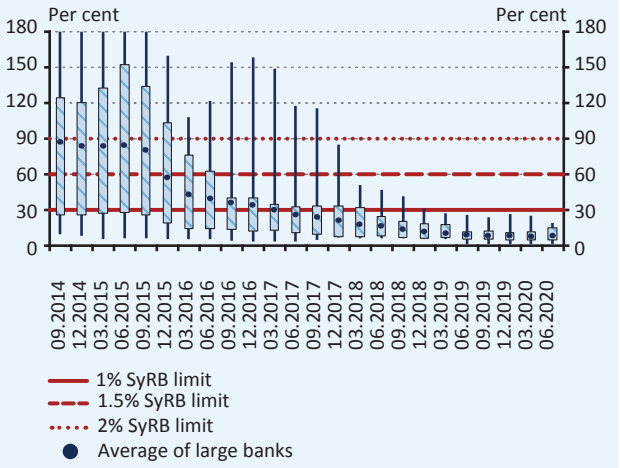
Chart 42
New domestic CRE project loans



Note: Adjusted for transfer of project loans reported as new disbursements. Domestic real estate development and buying project loans.

Source: MNB.

Chart 43
Development and dispersion of calibration ratios of large banks by SyRB calibration amended in 2019



Source: MNB.

project financing exposures, often without real foreign currency coverage and thus potentially carrying systemic risk, it became necessary to modify the application of the capital buffer in such a way that it is able to exert an impact both on the excessive growth in the outstanding project loans and their currency structure (Chart 42). Accordingly, in addition to recognising the problem portfolio in full, non-problem domestic foreign currency project financing loans were also taken into consideration with a 5-percent weight, for the first time upon determining the SyRB rates effective from 1 January 2020, which however – in line with the preventive nature of the measures – did not entail the imposing of effective capital requirement on any of the banks, providing adequate room for continuing project financing in a sound structure. At the same time, based on previous experiences, the current calibration may represent a material constraint for the build-up of risky project financing portfolios and may sufficiently increase the respective institutions' shock-absorbing capacity related to systemic risk (Chart 43).

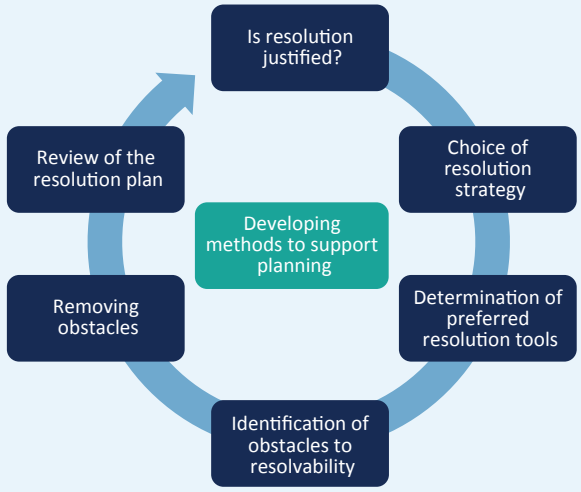
8.3 IN VIEW OF THE CORONAVIRUS PANDEMIC, THE MNB SUSPENDED THE APPLICATION OF THE SYRB

With the aim of mitigating the impacts of the coronavirus pandemic, at the next review, due at the end of 2020, the MNB will not prescribe any capital requirement. The quality of commercial real estate project financing portfolios may deteriorate primarily in the case of industries and property types hit hard by the pandemic, which would necessitate the prescription of a capital buffer under the present scheme. This could trigger a procyclical effect, exacerbating the negative impacts of the crisis and curbing lending, which may entail a growth in stability risks. Accordingly, the decision supports the bridging of the expected difficulties and the maintenance of the banking sector's lending capacity. At the same time, the MNB continuously monitors the quality of banks' credit portfolio and commercial real estate market trends and will intervene, as necessary, to reduce the risks.

9 Resolution activity of the MNB

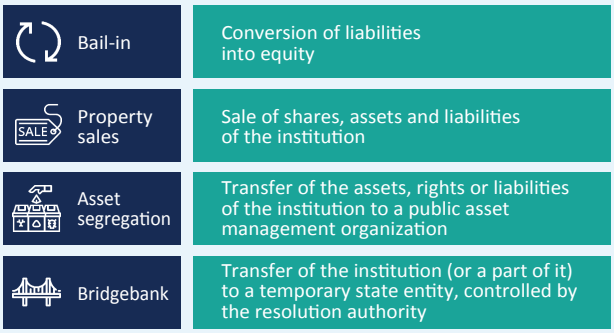
As a resolution authority, the MNB prepares independently and continuously enhances the resolution plans to address the crisis situation of credit institutions and investment firms operating exclusively in Hungary. In the second half of 2019, the MNB achieved major progress in the development of the crisis management framework: it further deepened the resolution plans and started to prescribe the MREL (Minimum Requirement for own funds and Eligible Liabilities) , making the resolution framework complete, and revises the rate of it annually. The MREL became comprehensive at the beginning of 2020; however, in view of the coronavirus pandemic the MNB postponed compliance with the interim MREL objectives by six months. The implementation of the BRRD2 rules in Hungary in 2020 will be an additional important development.

Chart 44
Resolution planning process



Source: MNB.

Chart 45
Resolution tools



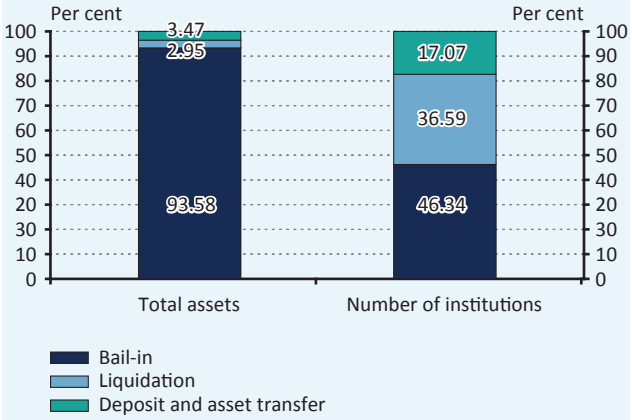
Source: MNB.

9.1 THE RESOLUTION PLANS ARE CONTINUOUSLY IMPROVED AND DEEPENED

In the case of all institutions, the resolution plans prepare for the management of a potentially emerging, severe crisis situation, irresolvable without administrative intervention, and analyse the justification for and the potential directions of the intervention *(Chart 44)***.** The starting point of the plans is the assessment of the MNB regarding whether in the event of the respective institution's crisis situation the liquidation thereof would be an adequate measure. During the assessment, the MNB analyses whether then the trust in the financial system would be prejudiced, the crisis would spread over to other actors of the financial system, and assesses the risks entailed by the loss of services rendered by the respective institution. If based on the assessment the liquidation is unfeasible, the resolution plan contains the preferred resolution tools and means to manage the crisis situation (*Chart 45*). By the second half of 2019, the MNB's resolution planning was completed; all domestic institutions falling within the Resolution Act have a resolution plan.

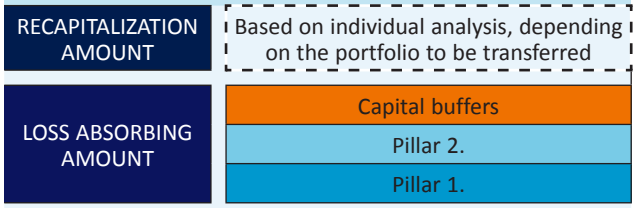
The MNB determines the application of the resolution tools by assessing the unique features of the respective institution. In the resolution plans, in the case of a large part of the institutions – primarily the vast majority of the investment firm and the small credit institutions – liquidation is preliminarily regarded as an adequate tool for phase out from the market. At the same time, in the case of institutions with more significant role in the financial system, the MNB plans to apply other resolution tool in

Chart 46
Preferred resolution tools for institutions operating in Hungary



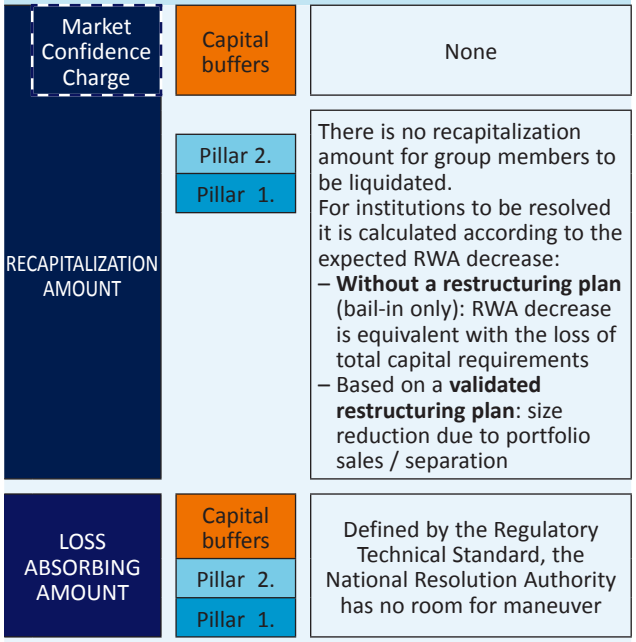
Source: MNB.

Chart 47
MREL requirement at transfer strategies (simplified resolution)



Source: MNB.

Chart 48
MREL requirement for large banks



Source: MNB.

the crisis management, namely bail-in, in order to maintain the continuous operation of the respective institution (*Chart 46*). However, in a specific crisis situation the effectively applied resolution tool depends on the current circumstances.

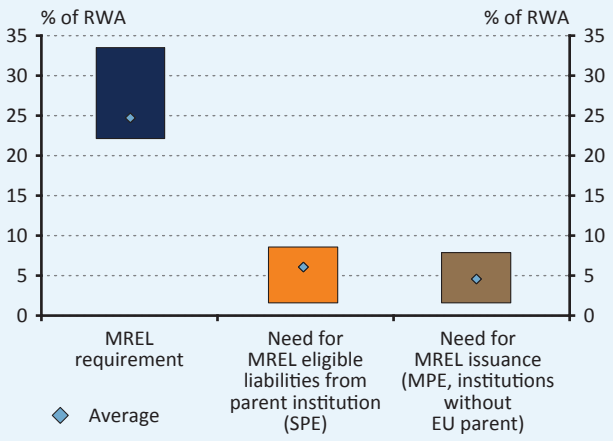
9.2 BY THE FIRST QUARTER OF 2020 THE MNB COMPLETED THE PRESCRIPTION OF THE MREL

The Magyar Nemzeti Bank prescribed the minimum requirement for the liabilities that can be written down or converted (MREL[9]). By prescribing MREL, the MNB may determine, in addition to the capital requirement, the holding of funds that in a crisis may be written down or converted into capital in part or in full, which ensure the bearing of losses by the owners and then by the creditors, and their contribution to recapitalisation. For determining whether it is necessary to prescribe any MREL, the decisive factor is the selection of the preferred resolution tool, specified in the resolution plan (*Chart 47 and Chart 48*). The MNB determined the MREL in accordance with the principles[10] published in November 2018.

Institutions must fulfil the requirement on a continuous basis after the 4-year adjustment period defined by the MNB; however, in view of the coronavirus pandemic, the MNB postponed the first deadline for the interim adjustment objectives by six months.

The MNB, considering the international legislative changes and the expected implementation thereof in Hungary, will review and change its principles related to the MREL in 2020. The changing of the principles is necessitated by the mandatory implementation of BRRD2 in Hungary by 28 December. Upon reviewing the principles, the MNB will continue to pay special attention – in addition to adequate strength of the financial stability backstop – to ensuring equal competition and international competitiveness of Hungarian institutions. By implementing BRRD2, according to the MNB's preliminary assessment, the new MREL principles will not represent major tightening for the Hungarian banking sector over the short term.

Chart 49
MREL for large banks as a ratio to RWA and the size of MREL shortfall for different resolution strategies



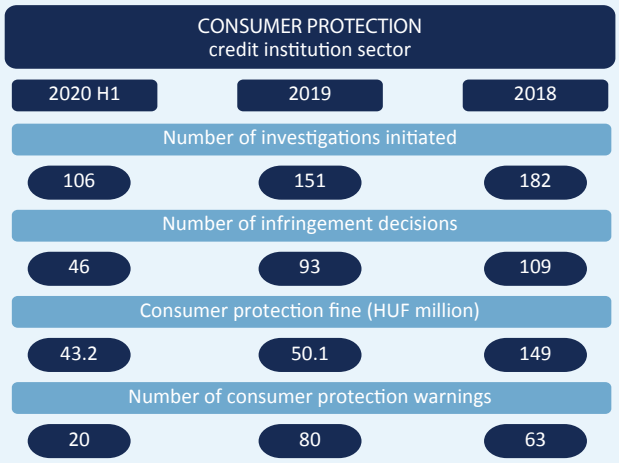
Note: The chart shows minimum and maximum values.
Source: MNB.

The MNB continuously monitors the adjustment necessitated by compliance with the MREL in the Hungarian banking sector. At present, the MREL represents additional capital requirement only for those institutions for the resolution of which bail-in has been defined as the preferred resolution tool. The majority of the respective institutions are compelled to adjust in order to fulfil the MREL (*Chart 49*). Institutions not belonging to a banking group and the parent companies are able to ensure their compliance with the requirement by external financing, primarily by capital or bond issuance. In the case of the Hungarian subsidiaries of banking groups with registered office in the EU, the need for independent external financing depends on the banking group's resolution strategy.

10 Financial consumer protection activity of the MNB

Through the trust in the financial system, the MNB's financial consumer protection activity – which has become increasingly complex and emphasised – makes major contribution to the maintenance of financial stability. Accordingly, the ensuring of strong, product-focused financial consumer protection has a prominent role also in the supervisory strategy for the period of 2020-2025. In 2019 and in the first half of 2020, the emphasis was on the active and continuous consumer protection oversight. As part of this, the MNB monitored with special care compliance with the fair banking regulations, the consumer risks related to variable interest rates and the consumer protection issues connected to credit card contracts. Based on the experiences of last year, in the future the focus may be on the provision of proper information related to online cross-border services and on the supporting of conscious consumer decisions.

Chart 50
Consumer protection activity in numbers



Note: The credit institution sector refers to credit institutions and their financial corporations.

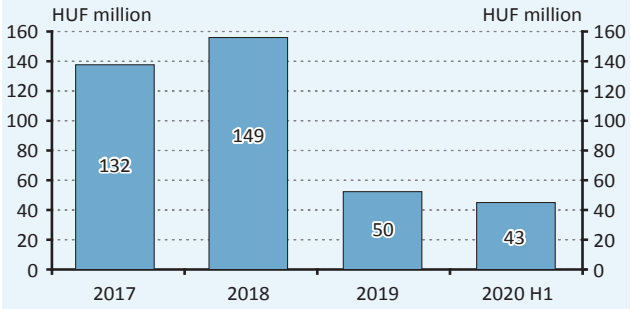
Source: MNB.

10.1 THE MNB SUPPORTS THE MAINTENANCE OF FINANCIAL STABILITY ALSO BY ITS SUPERVISORY TOOLS

The cornerstone of maintaining financial stability is the strengthening of trust in the financial system, which is also supported by the MNB's consumer protection activity. The recent financial crisis highlighted the need for consumer protection in connection with the maintenance of the financial sector's long-term stability. Financial consumer protection increases trust in the financial system by (1) fostering the provision of accurate, simple and comparable information to consumers on financial services or products, (2) ensuring cheap and efficient access to dispute resolution with financial institutions, and (3) improving financial awareness[11]. Financial consumer protection expects financial institutions to use fair, non-coercive and well-founded practices upon advertising and selling financial products and services to consumers. When proper information and dispute resolution mechanisms are available, consumers can make informed decisions in respect of their risk assumption, which may reduce the risk of their excessive indebtedness and also increases the financial system's shock-absorbing capacity.

In 2019 and in the first half of 2020, in addition to the classic consumer protection oversight activity, the MNB's continuous consumer protection activity has also come to the front and gained importance. In the course of this activity, the MNB called the attention of the institutions to the infringing or disquieting practices, in terms of consumer protection, in management letters and consumer protection warnings, and it also urged on the financial compensation of consumers by the institutions, as necessary (*Chart 50*).

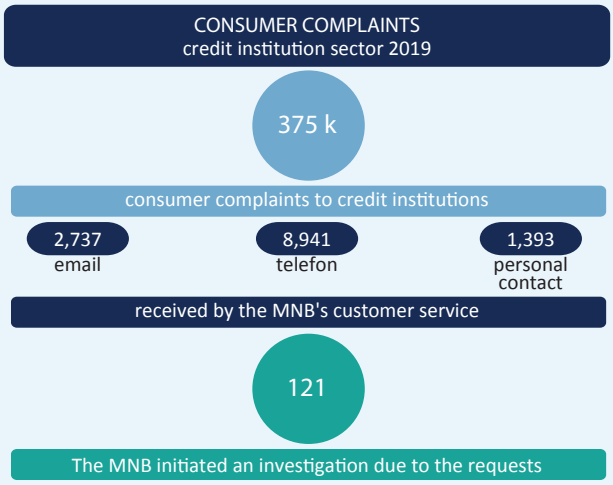
Chart 51
Developments in consumer protection fines in the credit institution sector



Note: The credit institution sector refers to credit institutions and their financial corporations.

Source: MNB.

Chart 52
Number of complaints in 2019



Note: The credit institution sector refers to credit institutions and their financial corporations.

Source: MNB.

10.2 THE MNB HAS ALSO PUT ADEQUATE EMPHASIS ON THE CLASSIC ADMINISTRATIVE INSPECTION ACTIVITY

As a result of the consumer protection inspection activity, consumer protection penalty was imposed in the amount of HUF 50.1 million in 2019 and HUF 42.7 million in the first half of 2020 (*Chart 51*). The amount of the imposed consumer protection penalty substantially decreased compared to 2018. Under the increasingly enforced, preventive continuous supervisory activity, in the first half of 2020 the amount of consumer protection penalties increased on a pro rata basis. In 2019, the institutions recorded a total of 375,000 complaints in the credit institution sector, which represents a decline compared to 2018 (*Chart 52*). In the first half of 2020 the year-on-year number of complaints, rose by more than 13 percent, also due to the moratorium on instalments. Based on the credit institutions' complaint statistics, in 2019 the most typical consumer problems concerned settlement, financial abuses, the quality of services and the rate of the commissions, costs and fees. Compared to the previous year, the number of complaints received by the institution in relation to financial abuses substantially increased (Table 2).

The MNB launched ex officio consumer protection inspection procedure only in justified cases – e.g. in view of identifying risks affecting a wide range of consumers – or in the case well-founded suspicion. The inadequate information of consumers in the advertising practice of institutions represented a risk in the financial market in 2019 as well. The related consumer protection inspections revealed shortcomings and misleading practices in the institutions' commercial communication. In the case of the inspections related to commercial communication, closed in 2019 and in the first half of 2020, consumer protection penalty was imposed on 5 institutions in the total amount of HUF 23.5 million.

In addition – similarly to previous years – compliance with fair banking legislation continued to receive special attention. The fair banking inspections launched in 2018 in respect of 10 institutions were completed in 2019. The MNB identified infringements at 8 of the 10 inspected financial institutions, and it imposed consumer protection penalty in the total amount of almost HUF 7 million on 7 institutions. The typical infringements included the failure to provide information prior to the amendment of the interest conditions of consumer loans, and the amendment of the interest rate on consumer loans which were unilateral, unfavourable for the consumer.

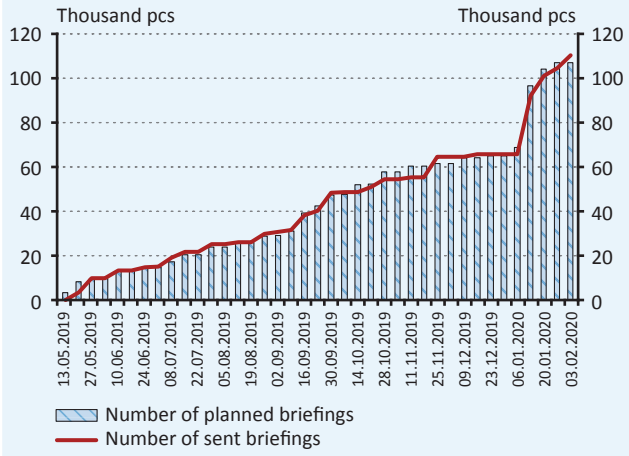
Table 2
Subjects of the complaints received by the institutions

Topic of complaints	2020 H1	2019	Change	2018
Settlement	35,479	75,935	-8%	82,752
Financial abuse	51,001	68,790	135%	29,248
Quality of service	23,982	45,092	28%	35,136
Amount of commission, cost, fee	20,308	38,764	2%	38,067
Execution of an order	18,734	30,036	29%	23,218
Other	12,457	24,203	26%	19,262
Electronic service	8,529	20,841	40%	14,852
Record deficiency	5,752	8,617	5%	8,196
Dispute account balance	3,907	8,006	-39%	13,231
Informing during the contract	3,016	6,702	38%	4,843

Note: The credit institution sector refers to credit institutions and their financial corporations. The settlement category means financial settlement complaints between the parties.

Source: MNB.

Chart 53
Number of letters informing about interest rate risk



Source: MNB.

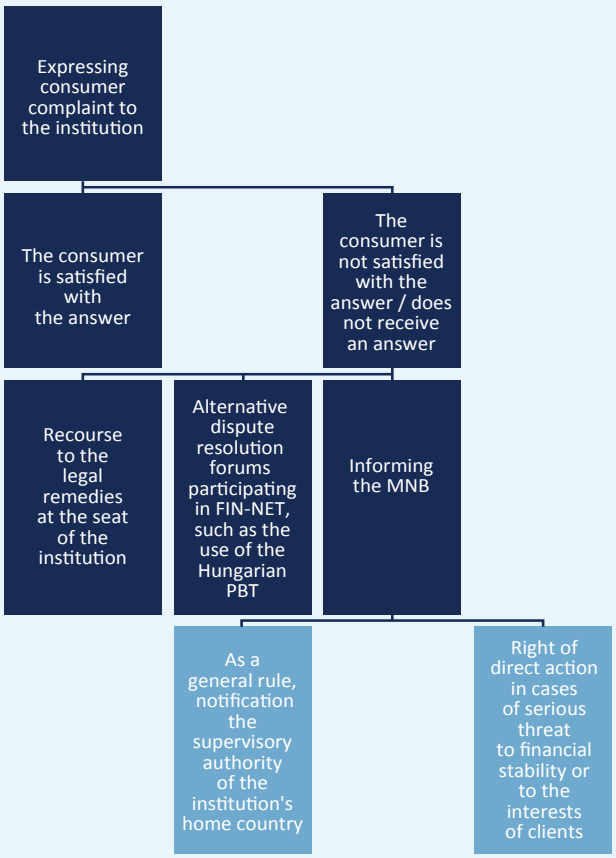
10.3 THE MNB DEALS ACTIVELY WITH THE CONSUMER PROTECTION ISSUES AFFECTING CREDIT PRODUCTS

The MNB issued a recommendation for the reduction of the interest rate risk of variable-rate mortgage loans[12]. An expectation stipulated in the recommendation is that financial institutions should give personalised information to household customers with contracts concluded before the effective date of the "fair banking" Act, i.e. 1 February 2015, with residual maturity of at least 10 years. The purpose of the information is that in respect of their existing mortgage loans consumers should consider not only the current interest rates and instalments, but also the potential consequences of the risk of interest rate change. Accordingly, the information sent to the respective household customers presents the risk stemming from the change in the interest rate on the specific consumer mortgage loan contracts through the amount of the instalment, together with possibilities of amending the contract within the bank to mortgage loans with interest rates fixed for longer interest rate fixation periods or for the whole maturity. Furthermore, in the recommendation the MNB urged on making re-contracting as easy as possible, passing only those fees and costs to the respective consumer that are directly linked to the contract amendment and can be objectively justified.

Although the sending of the expected notices commenced already in mid-2019, for the time being only a few customers took advantage of the possibility of re-contracting. The process of sending the notices has not ended yet; at the same time, based on the data supplied by banks, the information in accordance with the Recommendation has been sent in respect of 109,000 contracts related to debt liabilities with total principal amount of HUF 784 billion. (*Chart 53*). More than 2,000 consumers took advantage of the possibility of contract amendment, as a result of which the interest rate was fixed on a variable-rate loan portfolio of roughly HUF 20 billion. When complying with the Recommendation, financial institutions followed the expectation – specified by the MNB as good practice – that under the amendment of the reference rate belonging to the long-term interest fixation, the original interest rate spread remains unchanged. Based on the recommendation, borrowers with variable rate mortgage loans will receive information on the interest rate risk annually.

Apart from this, in 2019 the MNB monitored with special care the consumer protection issues related the credit card contracts. In view of the dynamic growth in payments by

Chart 54
Addressing consumer signals related to cross-border service providers



Note: FIN-NET is a cross-border out-of-court complaints network and is made up of the existing national complaint schemes for financial services in Europe.

Source: MNB

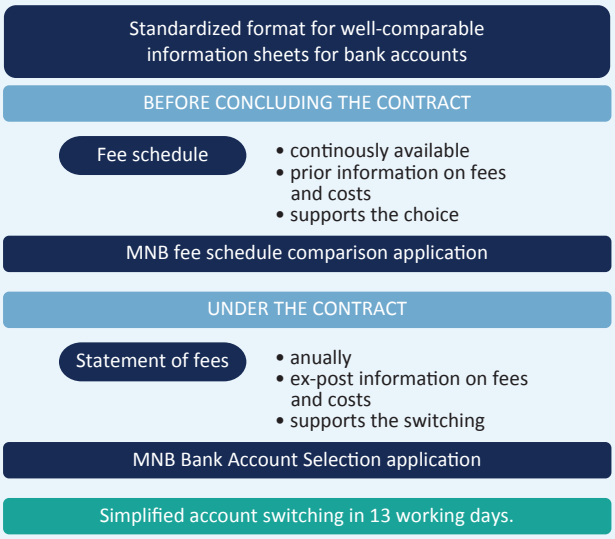
card and the innovative payment solutions appearing in recent years as well as the complex credit card schemes, often difficult to understand for the consumers, at present the MNB performs an analysis focusing on the unfair or not sufficiently clear conditions of the credit card contracts, covering all dominant market participants. The analysis process is expected to be completed in 2020.

10.4 THE MNB ALSO MONITORS, IN CONSUMER PROTECTION TERMS, THE ACTIVITY OF THE CROSS-BORDER FINANCIAL MARKET SERVICE PROVIDERS IN HUNGARY, THE COMPLIANCE WITH LAWS ON THE MORATORIUM ON INSTALMENTS AND NEW PAYMENT RULES

In connection with the cross-border services the MNB takes the necessary measures as required, within it scope of its competence, in order to protect the financial interests and security of Hungarian consumers. However, it should be noted that the MNB's instruments vis-à-vis the cross-border service providers are limited; moreover, in the absence of data supply the central bank has little information on the providers and the users of the services. In 2019 the business activity of institutions rendering cross-border services strengthened in the Hungarian market. These service providers typically render services related to the issuance of e-money and payment services to consumers, and in their case consumer protection risks include – among other things – the language used in rendering the services, the adequacy of the complaint management and the alternative dispute resolution, the adequacy and availability of the information related to the conditions and fees of the services and the stressing of the information related to the absence of deposit insurance. At the same time, in view of the legislative environment, the consumer protection supervision of the host countries and their possibility to the take measures in respect of these institutions' cross-border services are limited. The MNB – as a general rule – has right to take direct measures only in exceptional cases, when the supervisory authority of the country of the service provider's registered office fails to take action or upon conducts severely jeopardising a wide range of consumers (*Chart 54*); however, it obtains the information justifying the eventual measures only indirectly.

The MNB inspected compliance with rules of the moratorium on instalments, which entered into force after 18 March 2020, under continuous communication at the financial institutions. Until the end of June 2020, the MNB reviewed 620 pages of –online and paper-based – informational documents of 30 institutions. The entry

Chart 55
New prospectuses prepared by payment service providers



Note: The Fee Schedule is a regularly updated document available on the website of payment service providers. The Fee Statement will be sent once a year, by 31 January, electronically or on paper.

Source: MNB.

into force of the rules of the moratorium on instalments necessitated immediate, fast modifications (particularly of IT nature) at the financial institutions in the management of loan contracts. In view of the anomalies arising during the implementation of the amendments and the enquiries of the institutions – in addition to the direct measures – in order to ensure the uniform application of the laws related to the moratorium on payments, until the end of June 2020, the MNB published a FAQ document comprising 76 questions on 11 subjects[13], thus providing guidance for the market participants. Furthermore, the MNB also provided guidelines on some fifty questions on the interpretation of the law, received from the financial institutions.

Based on the Payment Account Directive[14] new rules entered in force from[15] 31 July 2019. The MNB inspects the publication and sending of the information documents of standard format across the EU. The fee information document serves the preliminary information of consumers, and in fact it is an excerpt of the institutions' announcement in a standard structure and style. In order to ensure the easy comparability of fee information documents the MNB developed an online application[16], where after comparing the fees of the services in a transparent form, in the Bank Account Selection application[17]it is possible for the consumers contemplating account opening or account switching to review the offers meeting their payment habits and select the appropriate product.[18]

From 2020, payment service providers must provide consumers once a year, until 31 January, with a statement of fees free of charge (*Chart 55*). The purpose of this is to present all fees incurred and effectively paid in connection with the use of all services related to the payment account, as well as the interest paid and received. It is particularly important, because the analyses performed by the MNB shows that the account services are too expensive compared to the Hungarian incomes [19] and various fees are charged under a variety of titles, in a difficult to understand manner. Furthermore, the package-based pricing – used in several countries of the EU – is hardly available, while this would be necessary for ensuring that the customers, merchants and service providers can properly benefit from the opportunities offered by the introduction of the instant payment system.

11 Focus topic: Changes in the EU financial regulatory framework

In 2019, after several years of preparatory work, the Member States of the European Union adopted laws related to the amendment of the European Single Rulebook. The amendments had wide-ranging objectives: the key objective was to integrate the missing elements of the Basel framework in the EU legislation in order to further enhance the stability and resilience of the financial intermediary system and to resolve the regulatory dilemmas emerged based on the practical experiences of recent years in order to increase the efficiency of the application of law. As a result of the amendment, several elements of the microprudential framework have substantially changed and the framework of the macroprudential regulation also changed at several points. The changes in the EU regulation of the set of macroprudential instruments may impact the domestic application of the systemic risk buffer and the capital buffer related to the systemically important institutions. As regards the latest amendments adopted in view of the coronavirus pandemic, it should be noted that those basically did not modify the prudential framework and had no effect on the set of macroprudential instruments.

Chart 56
Timetable of the adoption and amendment of the Single Rulebook

Source: MNB

11.1 THE AMENDMENT OF THE EUROPEAN SINGLE RULEBOOK CAUSED MATERIAL CHANGES IN THE SET OF PRUDENTIAL INSTRUMENTS

The 2019 amendment of the European Single Rulebook, defining the prudential requirements for financial institutions, brought major changes in the banking regulation. Following the financial crisis, the EU Member States decided to start the implementation of the standards elaborated by the Basel Committee on Banking Supervision for the prudential operation of banks across the EU. During the process a regulatory package harmonised at EU level (the European Single Rulebook) was elaborated, which not in the least meant the closing of the process (Chart 56). The Rulebook was revised in 2019, and the package of legislative amendment resulting from that mostly affected the elements of the regulatory package adopted in 2013, i.e. the Capital Requirement Regulation (CRR) and the Capital Requirements Directive (CRDIV) (Chart 57). The amended rules are introduced gradually, until 28 June 2023 inclusive, while the implementation of the modified Directive must be completed by 28 December 2020.

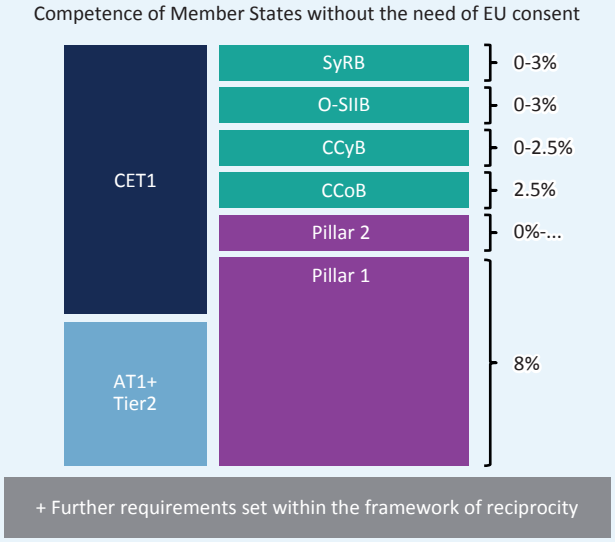
During the review, both the microprudential and the macroprudential frameworks were modified. The reasons for the changes are manifold: it was a general objective to integrate the missing elements of the Basel III framework, elaborated by the Basel Committee on Banking Supervision, in the EU regulation, and the proportioning of the rules – considering the business model and size of banks – have also become justified. Based on the amendment – in addition to a number of other provisions – the regulation

Chart 57
The currently most relevant legal acts of the Single Rulebook

Implementation is not needed	
CRR2	Regulation on the prudential requirements of banks (Capital Requirements Regulation)
Implementation by Member States is needed	
CRD V	Directive on the capital buffers and the supervision of banks (Capital Requirements Directive)
BRRD2	Directive on the recovery and resolution of banks
DGSD	Directive on the deposit guarantee schemes
Related legal acts	
Implementing and delegated acts promoting the uniform application and enforcement of the abovementoned	
Legal acts regulating certain financial services (e.g. directives on payment services and consumer credit)	

Source: MNB

Chart 58
The structure of the capital buffers based on the amendments



Note: The Pillar 2 capital requirement cannot be applied to tackle macroprudential risks in the future.

Source: MNB

related to the leverage ratio and the net stable funding ratio was finalised, the rules applicable to the assumption of large exposures and to the trading book were revised, more proportionate requirements were defined for smaller institutions, and the legislator also implemented changes to foster the financing of small and medium-sized enterprises further.

A number of changes were triggered by the overlaps between the micro- and macroprudential frameworks and the inconsistencies existing in respect of the macroprudential capital requirements. Based on the 2013 regulatory package, the sets of micro- and macroprudential instruments were not always clearly detached: the regulation permitted the management of both types of risks by the same element of the set of administrative instruments, which in certain countries often hindered the harmonised application of the rules and clear identification of the managed risks. Based on the 2019 package of legislative amendments, the two frameworks are detached more sharply; e.g. in the future it will not be permitted to apply the Pillar 2 capital requirements to the management of macroprudential risks (Chart 58). In the light of the changes it was also necessary to expand the scope of the macroprudential authority's competence.

11.2 THE CONDITIONS OF APPLYING THE SYSTEMIC RISK BUFFERS AND THE CAPITAL BUFFERS FOR SYSTEMICALLY IMPORTANT INSTITUTIONS WILL CHANGE

The change related to the systemic risk buffer that has the most significant relevance in Hungary is the expansion of range of risks that may be covered by this capital requirement and the possibility to prescribe it on a sectoral basis. As a result of the amendment, the maintenance of the systemic risk buffer may be already prescribed to prevent and mitigate any type of macroprudential or systemic risk not mentioned in CRR and CRD, which broadens the possibilities of using the instrument. As a compensation for the termination of the application of Pillar 2 for macroprudential purposes, the imposition of the capital buffer now may be based on sectoral exposures or on the sub-categories of those, which facilitates more targeted application of the tool.

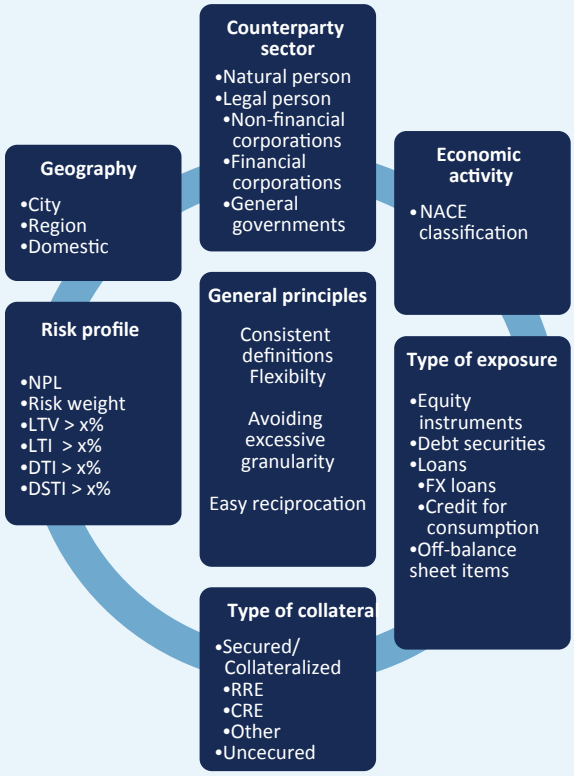
It is a change in the capital buffer for other systemically important institutions (O-SII) that its maximum rate will increase. In respect of the capital buffer requirement related to other systemically important institutions it is a major change that Member States may set the rate of this capital buffer at 3 percent instead of the previous 2 percent

Chart 59
The general changes in the requirements of the systemic risk buffer and the buffer of other systemically important institutions

Tool	Competence			
	Before		After	
	MS compet.	EU procedure	MS compet.	EU procedure
SyRB	0% -3%	Above 3%	0% -3%	Above 3%
O-SIIB	0% -2%	*Not possible*	**0% -3%**	**Above 3%**

Source: MNB

Chart 60
The dimensions for the application of systemic risk buffer



Source: MNB

(Chart 59). Furthermore, the subject to the authorisation by the Commission, the macroprudential authorities may prescribe capital buffer even at a higher rate than that. The O-SII buffer rates prescribed for the subsidiaries qualifying as other systemically important bank, the parent company of which is also a systemically important institution, the systemically important capital buffer rate prescribed for the parent institution represents an upper bound. Until now this upper bound was the higher of the buffer rate applicable at the group-level or 1 percent. As a result of the amendments, the buffer rate that may be prescribed for such institutions is the lower of the sum of buffer rate applicable to the group on an aggregate basis plus 1 percent or 3 percent (or the buffer rate over 3 percent applicable to the group based on the authorisation of the Commission).

11.3 DUE TO THE CHANGE IN THE REGULATORY FRAMEWORK, THE ELEMENTS OF THE DOMESTIC SET OF INSTRUMENTS SHALL BE REVISED

The present application of SyRB in Hungary may be maintained under the new regulation as well, and it also becomes possible to manage new dimensions of the systemic risks. The current application of SyRB to commercial real estate project financing loans can be maintained within the new regulatory framework as well, and it is still justified due to the systemic risk affecting the entirety of the operation of the banking sector. However, in addition to this the MNB will have the opportunity to manage such structural and cyclical risks of sectoral nature that cannot be managed by other macroprudential tools. When defining the sector relevant related to the systemic risk it is possible to combine the geographic, counterparty, industry, product, portfolio quality or other dimension of the exposure (Chart 60).

The eventual raising of the O-SII buffers may be examined in the longer run. Within the framework of MNB-measures introduced to mitigate the economic effects of the coronavirus pandemic, the MNB released the O-SII buffers from 1 July 2020. It may be justified to examine after the repeated, gradual build-up of the capital requirement according to the anticipated path, commencing from 2022, whether it should set increased buffer rates for the domestic O-SII banks at 3 percent, provided for by amendment of the EU legislation, instead of 2 percent, i.e. the rate established based on the ratios of the O-SII buffer rates applied before March 2020.

The introduction of the net stable funding ratio also broadens the MNB's possibilities to manage the funding risks. An important element of the package of legislative

Table 3
Key elements of the temporary amendment of CRR related to the coronavirus pandemic

Measures for the temporary release of institutions' capital requirements
1. Extending by 2 years the measures limiting the negative effects of the likely increase in banks' provisions related to the application of IFRS 9
2. The exclusion of state-guaranteed loans in the first 7 years of non-performance from the minimum loss coverage requirement
3. Delay in the introduction of the leverage ratio buffer by one year to 1st of January 2023
4. Earlier introduction of some capital relief measures: • Exemption of prudently valued software from the deduction from own funds • Preferential treatment related to risk weights: – Certain loans backed by pensions or salaries – Amendment of the SME supporting factor – Introduction of infrastructure supporting factor
Measures supporting the effective transition of central bank liquidity to the economy
5. Easing of the exclusion mechanisms related to the leverage ratio requirement of exposures to central banks

Source: MNB

amendments is the introduction of the detailed rules related to the net stable funding ratio (NSFR) and its application with effect from 28 June 2021. This has dual relevance for the national macroprudential authorities. On the one hand, it is necessary to monitor the process of the banks' adjustment, by creating the conditions for data reporting for monitoring purposes as soon as possible. On the other hand, the conditions of applying the NSFR in Hungary must be developed in view of the leeway provided by the EU legislative framework, such as, for example, exemption from compliance at individual level, the application of simplified NSFR that may be used by small institutions and other national discretions not listed here. Thirdly, national authorities will be permitted to amend the NSFR framework – after completing certain EU procedure – along financial stability objectives, within the framework of the national flexibility measures under Article 458 of CRR.

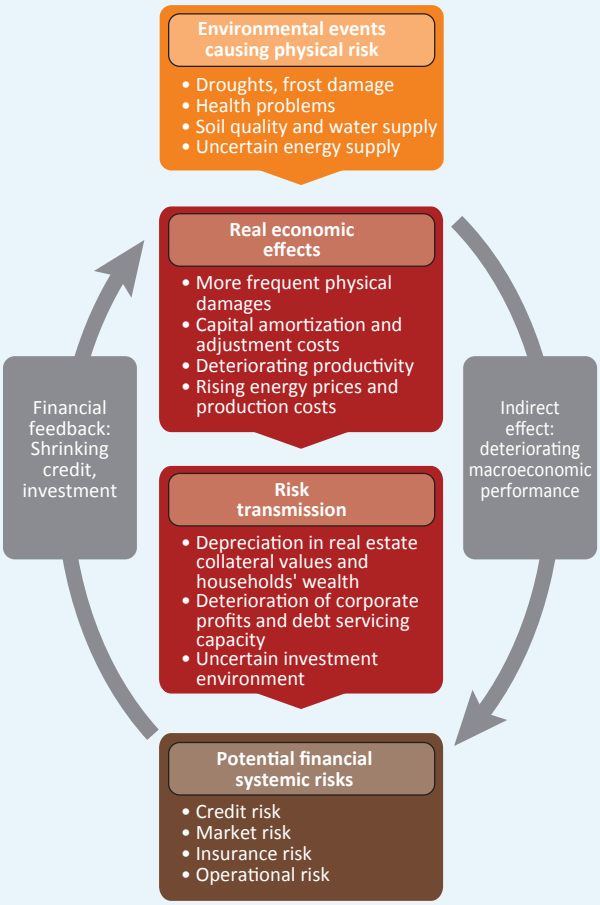
11.4 IMPACTS OF THE CORONAVIRUS PANDEMIC ON THE EU REGULATION

The temporary amendment of CRR related to the coronavirus pandemic was published on 26 June 2020 with the purpose to expand credit institutions' lending capacities at the same time preserving the stability of the banking sector. Accepting the efficient use of the national leeway provided by the EU regulation aimed at the fostering of lending, it has become justified at EU level as well to provide further support for the operation of banks, thereby also supporting the access of the agents of the real economy to credit. This was carried out without any material amendment of the prudential regulatory framework and the set of macroprudential instruments, mainly through the amendment of the original deadlines and the introduction of targeted exemptions. *(Table 3*).

12 Focus topic: Potential consequences of climate change and the green transition on financial stability

The environmental damages caused by the climate change pose physical risk to the global and domestic economy. The regulations aimed at the reduction of global warming, and the green technological and socioeconomic transition necessary for this, may substantially disrupt – depending on the regulatory interventions and the paths of technological progress – the economic activities entailing high emission of greenhouse gases. This may expose the respective companies and the financial institutions financing those to losses and depreciation, i.e. to transition risks. The MNB started to assess the exposure of the domestic financial system along the potential systemic risks accompanying the climate change. In addition, similarly to the international regulatory directions, the MNB started to explore the possibilities of modifying the macroprudential regulation in order to incentivize the banking sector to expand toward green financing, first of all within the framework of the mortgage funding adequacy ratio (MFAR) requirement.

Chart 61
The transmission channels of physical risks



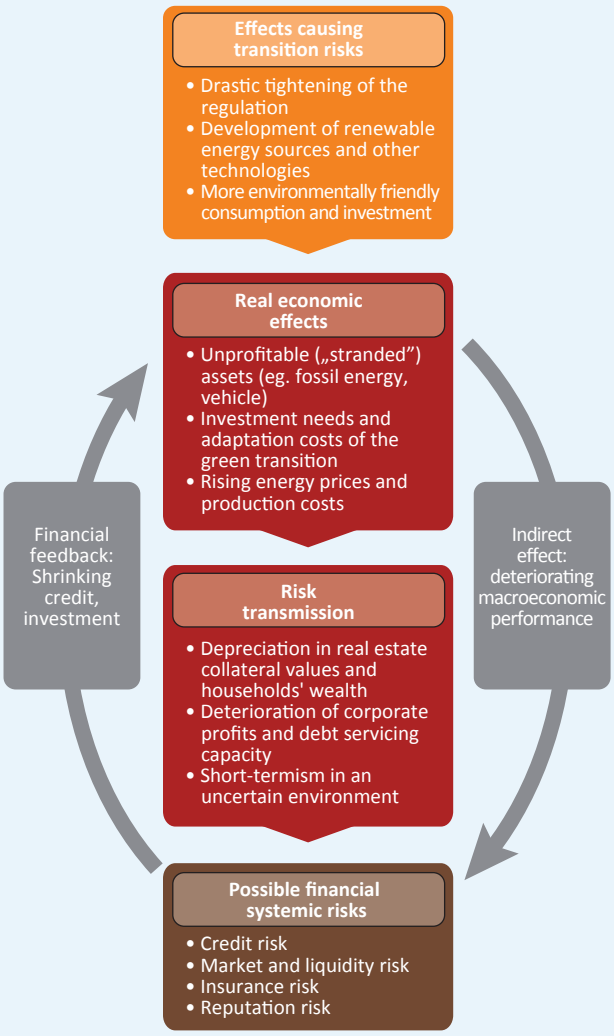
Source: MNB, using NGFS, 2019

12.1 AS A RESULT OF CLIMATE CHANGE, THE ECONOMY MAY FACE PHYSICAL AND TRANSITION RISKS

The risks of the increase of environmental damages caused by the climate change pose physical risks to the financial system. The most direct example of physical risk is that of an increase in the number of insured claim events, which may cause payment obligations to soar in the insurance sector. At the same time, environmental damages may also represent risk for the financial system through other direct and indirect channels (Chart 61), for example through the disorders in credit financed economic activities, the unfeasibility of business plans due to the extraordinary costs caused by the damages or the depreciation of the real estate serving as collateral.

The reduction of the emission of greenhouse gases (GHG) and the creation of a climate neutral economy necessitate extensive involvement in financing and investment from the banking sector in the near future. The investment needs of the green transformation of the economy, i.e. the green investment gap is substantial both globally and in the European Union. Based on the National Energy and Climate Plan of Hungary (NECP, 2020), the production of carbon-neutral electricity, the full replacement of the natural gas consumption and placing transport on a fully electronic basis, would cost roughly HUF 50,000 billion until 2050.[21] This requires significant engagement, but also business opportunities for the banking sector as well.

Chart 62
The transmission channels of transition risks



Source: MNB, using NGFS, 2019

Chart 63
Interaction between the transition and physical risks of climate change

Transition pathway	Are climate targets going to be met?	
	Met	**Failed**
Disorderly	**Significant transition risk** Sudden, unexpected and disruptive regulatory intervention	**Significant physical and transition risk** The drastic regulatory intervention is late
Orderly	**Moderate transition and physical risk** Regulatory intervention is in time and the uncertainty is kept measured	**Significant physical risk** There is no unexpected regulatory shock, but the climate targets are not going to be met

Transition risks ↑

Physical risks →

Source: NGFS, 2019

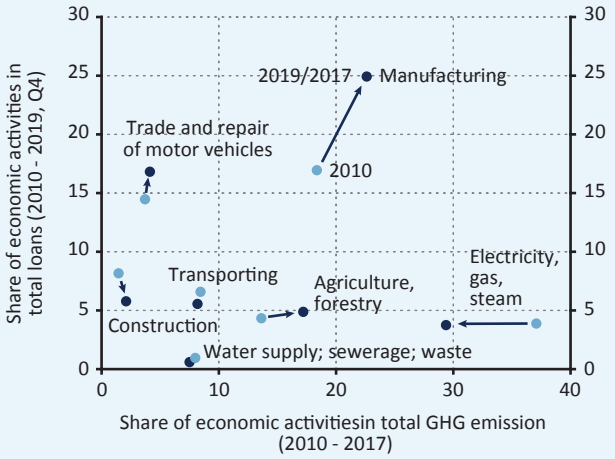
Green transition, driven by uncertain and abrupt regulatory changes, may act as a shock for industries operating with high GHG emission. Transition risk emerges when the valuation of companies operating with high GHG emission is repriced intensively and unexpectedly as a result of political commitments, technological progress or public opinion (ECB, 2019).[22] This may hit directly the industries engaged in the production of fossil fuels, but it may also have unfavourable effects on companies or products closely linked in the production chain (e.g. car manufacture) (Chart 62). The risk of the shock may be amplified not only by the potential uncertainty surrounding the regulatory path and the unexpected, drastic tightening, but also the short-termism, also referred to as the "tragedy of horizon" (Carney, 2015).[23]

Among its other duties, financial regulation shall support reaching the optimal balance between the mitigation of physical risks and environmental damages and the overly drastic and short-term interventions (Chart 63 summarises accessible and often quoted stress scenarios resulting from the interaction of the two risks).

12.2 SYSTEMIC RISKS COULD ARISE DUE TO CLIMATE CHANGE AND THE GREEN TRANSITION

At the banks and insurers, the physical and transition risks may appear in the strengthening of several risk types. The deterioration of the profitability of corporate clients pursuing GHG-intensive activity and the depreciation of the households' real estate collateral may generate credit risk. The depreciation and mass sale of the securities of the affected industries may also entail an increase in market risk and liquidity risk. The insurance risks of the increasing damages due to natural disasters and health impacts may increase the physical risks of the insurance sector, and the uncertainty surrounding the pricing of the diffusion of green technologies may also pose transition risks to insurers[24]. Finally, the uncertainty about the value of financial instruments susceptible to the impacts of the climate change and the changes in the preferences related to the choice of service providers due to the spreading of the environmental awareness of clients and investors may generate reputational risk.

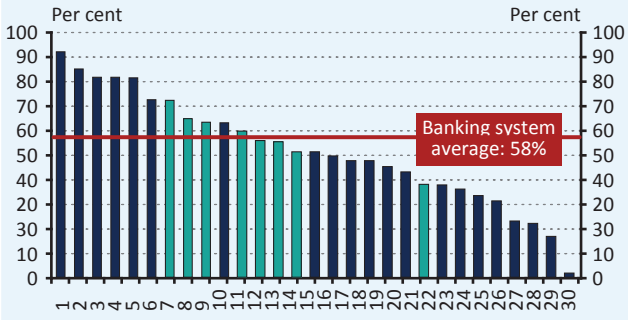
Chart 64
Share of the economic activities with the 7 largest GHG emission in total GHG emissions and in total banking system loans



Note: Light blue dots indicate the 2010 values while dark blue dots indicate the 2017 GHG emission values and the 2019 loan values.

Source: MNB

Chart 65
The share of the loan exposures of individual banking groups against economic activities with the 7 largest GHG emission in their total loan portfolio to non-financial corporations



Note: The orange columns indicate the O-SII banks. The average value of the banking system is calculated by weighting with the exposures in the economic activities with large GHG emission. The economic activities with 7 largest GHG emission are responsible for around 90 percent of the total GHG emission of the economy (Electricity, gas, steam and air conditioning supply, Manufacturing, Agriculture, forestry and fishing, Transporting and storage, Water supply; sewerage; waste management and remediation activities, Wholesale and retail trade; repair of motor vehicles and motorcycles and Construction).

Source: MNB

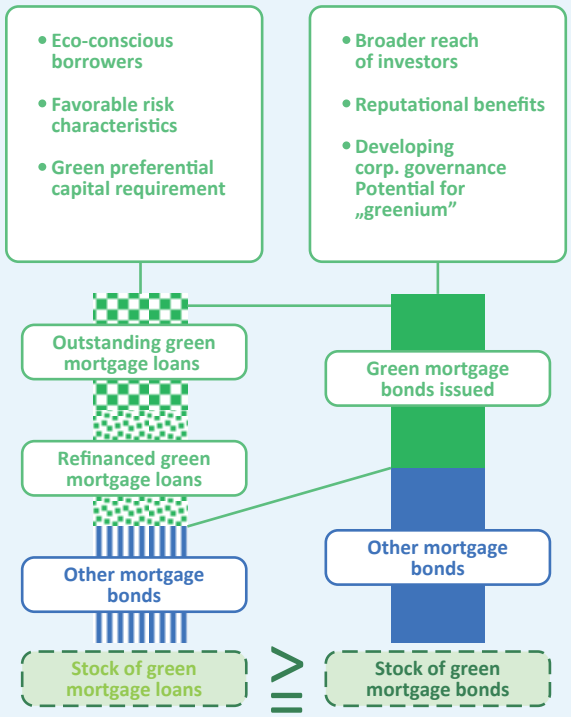
Household debtors could be impacted by the green transition through the valuation of the collateral real estate. The empirical analyses [25] started only recently and for the time being they do not clearly confirm the positive impacts of the transition. However, the first results confirm the hypotheses according to which the sustainable and environmental-friendly properties are likely to preserve their value better, and the degree of the energy efficiency and sustainability of the real estate collateral may have positive effect on the credit risk of mortgage debtors.

12.3 THE HUNGARIAN BANKING SECTOR SHOULD ALSO PREPARE FOR THE RISKS RELATED TO CLIMATE CHANGE

The exposure of Hungarian banks to industries operating with high GHG emission is significant, although there is major difference between institutions. At the highly aggregated level of the banking sector – with the exception of manufacturing – seemingly there is negative correlation between the share of exposures of the banking system to an economic activity and the share of a national economy branch in GHG emission (*Chart 64*). However, when examining this at the level of individual banks, the picture is more nuanced. Certain, systemically important banks have large exposure to industries responsible for greater GHG emission (Chart 65) and their exposures to a couple of sectors with high GHG emission may be concentrated.

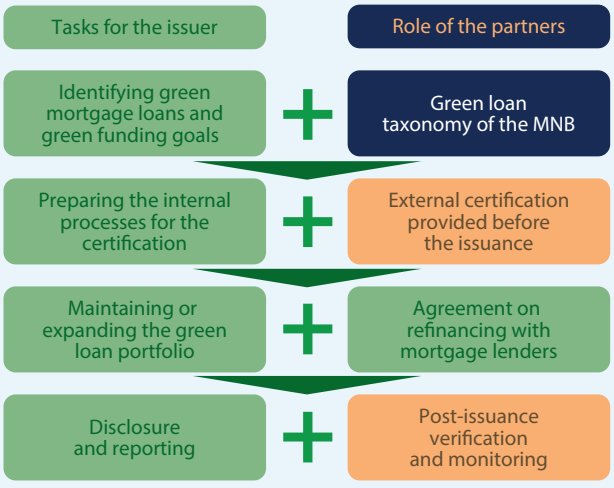
The first step of the risk mitigation is to facilitate for investors and creditors to assess the risks of the enterprises characterized by high emission levels. The MNB examines the possibilities of assessing the stress scenario related to climate change and the introduction of disclosure requirements providing information on environmental risks and sustainability commitments (ESG). In addition, the central bank has already announced its green lending and data collection programme encouraged by bank capital allowance.[26] Hopefully the data gained will also permit the empirical analysis of the green hypotheses (the more favourable risk attributes of the green household mortgage loans).

Chart 66
The scheme and potential advantages of the issuance of green mortgage bonds and green mortgage loans



Source: MNB, Green Retail Lending in Hungary Background Paper, 2019

Chart 67
Steps of certifying and issuing green mortgage bonds



Source: MNB

Diversified financing of the banking sector may be also fostered by the sufficient expansion of the supply of green financial instruments to satisfy investment demands. For the time being, the green bonds issued by financial corporations constitute a relatively small but fast-growing segment of international capital markets.[27] While the definition of the standards for green bonds is already in progress within the framework of the EU regulation (see box 6: International regulatory initiatives in green financing), there are examples and good practice across Europe for the issuance of bonds financing green loan purposes certified by specialised external rating agencies and covered bonds financing energy-efficient residential properties.[28] It is the latter, green mortgage bond issuance that may represent a point of entry to the green bond market in the Hungarian banking sector as well. This, in accordance with the international examples, may be also realised, with the necessary information, based on the collateral pools of mortgage banks which are not segregated in terms of loss-bearing and including the outstanding mortgage loans qualifying as green exposures. Beyond the promotion of the positive reputational, corporate governance and ESG objectives, green issuances would also have preferable market-building effect in terms of systemic risks if it increased demand from mortgage bond investors outside the Hungarian banking sector, thereby strengthening banks' stable and diversified funding.

The MNB is exploring the options of introducing preferential treatment within the framework of the MFAR regulation, which could incentivize the issuance of green mortgage bonds. The preconditions for this include the formulation of the definition of green loan and the availability of information to banks related to the energy efficiency of properties financed by mortgage loans, the possibilities of which are also being examined by the MNB (*Chart 66* and *Chart 67*).

Box 6
International regulatory initiatives in green financing

In recent years prudential authorities all over the world have been paying increasing attention to understanding the risks of climate change. The countries participating in the Paris Agreement[29] intend to ensure that the flow of financial funds is aligned with lower level of the emission of greenhouse gases. NGFS – an organisation gathering already more than 50 central banks and prudential authorities (including the MNB), and a dozen of other international financial standard creating organisation[30] - aims to direct the attention of public authorities and financial institutions all over the world to climate change through recommendations related to the financial supervision and central bank practice and supporting the development of the regulatory framework and knowledge sharing,.[31] Of the sustainability initiatives of the European Commission the Action Plan for the financing of sustainable growth, published in March 2018[32], lays down the cornerstones of the banking sector's prudential regulation supporting green transition.

Over the short term the prudential objective could include the development of risk monitoring and the support of market activities financing sustainable economy, while upon the potential intensification of risks further strengthening of resilience could be envisaged. At present the focus of the management of systemic risks stemming from climate change is on the understanding of the risks and the mitigation of the major shortage of data all over the world. The absence of information calls for further preparation of the regulators and market participants, which is essential for the development of the environmental risk monitoring systems, the pricing of the green and brown financial products and the assessment of their risk attributes as well as for determining the sustainability of the activities financed by financial intermediation. The preventive regulatory interventions aim to divert capital and loan allocation toward the sustainable economic activities through positive incentives and the expansion of information reaching the market. Nevertheless, the report of the ESRB[33] also suggest that over the long term – upon the intensification of the discussed risks – it may be necessary to apply macroprudential capital buffers strengthening the loss-absorbing capacity, large exposure limits or even capital requirements determined at the level of exposures based on the intensity of the underlying economic (or consumption) activity's GHG emission. Already several of the developing economies with major GHG emission apply certain macroprudential rules to mitigate risks [34] (although from time to time under materially different economic and institutional conditions, e.g. in China).

The assessment and management of the physical and transition risks calls for a new risk management approach; there are already pioneering examples of using scenario-based methods[35]. NGFS is also expected to publish its global recommendations for the climate stress scenario analyses in the near future. Based on its statutory mandate, the European Banking Authority (EBA) will commence the assessment of the climate stress tests in the coming years, and it recommends that credit institutions should also do so. First in 2020 the impact of the discussed physical and transition risks will be discussed within the framework of a voluntary sensitivity analysis.

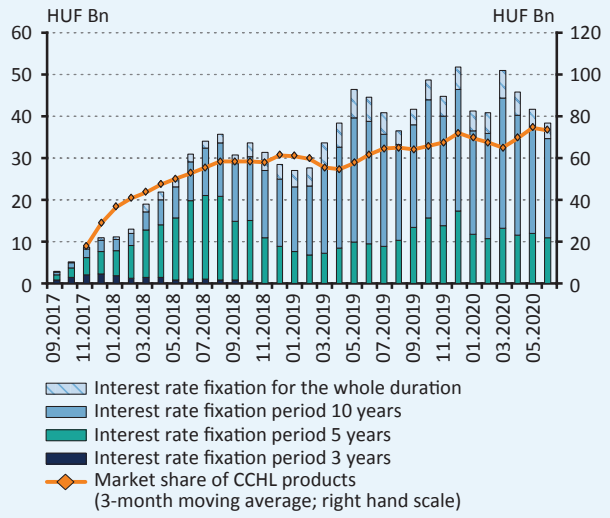
In addition to the transformation of the investors' and creditors' risk management procedures, it is also necessary to establish the investment opportunities that may offer an alternative to the recognised climate change related risks and may facilitate the financing of green investments and green loan purposes. As part of the EU's renewed sustainable financial strategy and also as the subject of a dedicated consultation process the public consultation of the green bond standard, elaborated by the European Commission, is already in progress. Building on the best market practices, the standards aim to create a voluntary framework. In this way they wish to reduce the costs connected to the complexity of the verification and reporting obligations. Furthermore, they would connect the design of green bonds and the taxonomy of green economic activities, being developed based on the EU's 2019 Taxonomy Regulation. In connection with the latter, the delegated legal act is also being developed, which will define the technical screening criteria suitable for the identification of sustainable economic activities supporting climate change mitigation and adaptation, and thus also those related to property development and trade. At present, it is the market-based or non-profit external rating agencies (e.g. the rating process of the Climate Bond Initiative) facilitating that issuers, satisfying the rating requirements, reach wider investor demand through institutions looking

for investments. **By introducing disclosure requirements, the supply of investors with public information could be improved on the sustainable financial activity of credit institutions.** The development of disclosure requirements related to the risks connected to climate change may exert positive impact on both the credit institutions' risk awareness and risk analysis and the investors' obtaining information. Globally, the TFCD working group of the Financial Stability Board (FSB) set up by the G20 provided recommendation[36] for the presentation of the risks connected to the climate change and of the management of those, and it also proposed to disclose the results of the stress scenario analyses. The ESG disclosure standards, also including the risks of the climate change, for the Member States of the European Union will be developed by EBA.

13 Focus topic: Role of the Certified Consumer-friendly products in achieving financial stability goals

With a view to strengthening competition in the banking sector, the Magyar Nemzeti Bank (MNB) introduced he Certified Consumer-friendly certification framework in June 2017. The success of the certified products is indicated by the fact that by the second quarter of 2020, households took Certified Consumer-friendly Housing Loans (CCHL) in the amount of more than HUF 1,000 billion, the market share of which among the potentially certifiable housing loans exceeded 70 percent. In addition to the housing loans, consumers can also benefit from Certified Consumer-friendly Home Insurance, providing cover for real risks, since January 2020. From January 2021 the range of Certified Consumer-friendly products will be expanded by the Certified Consumer-friendly Personal Loan product, which – in addition to stimulating competition in the personal loan market – also supports the enhancement of digital processes.

Chart 68
CCHL disbursements by interest period



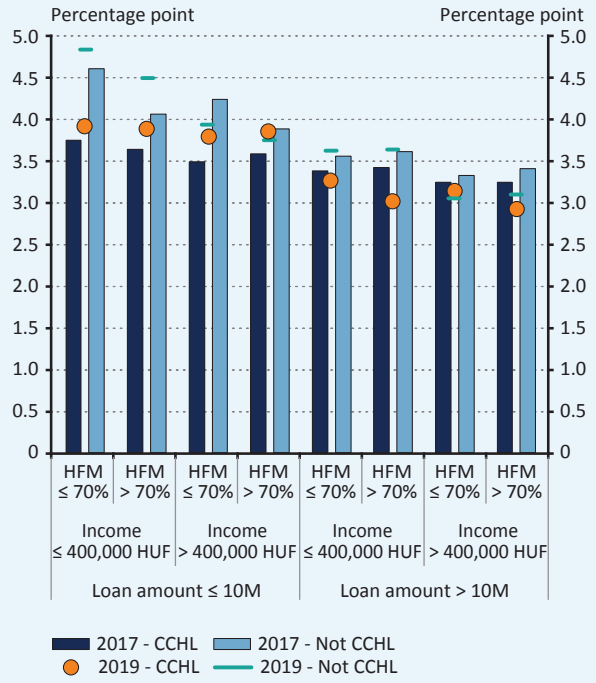
*Note: *Among potentially qualifying bank housing loans.*
Source: MNB.

13.1 CERTIFIED CONSUMER-FRIENDLY HOUSING LOANS HAVE BECOME A FLAGSHIP PRODUCT OF THE HOUSING LOAN MARKET IN 3 YEARS

During the past three years, more than 80,000 borrowers drew down certified housing loans in the amount of almost HUF 1,100 billion, with interest rate fixation typically for 10 years or for the whole tenor. By June 2020, the total amount of the Certified Consumer-friendly Housing Loans (CCHL) reached almost HUF 1,100 billion. By 2020, the certified housing loans dominated the housing loan market, by June 2020 reaching a market share over 70 percent, also supporting the reduction of variable-rate loans (*Chart 68*).

By stimulating competition, certified housing loans supported the decrease in interest rate spreads. The APR spread over the reference rate on the CCHL products disbursed in 2019, depending on the loan attributes, may have been lower by 1 percentage point compared to the non-certified housing loans. The lower interest rate spread on CCHL products compared to the non-certified housing loans appeared in a wide range of consumer groups, irrespective of the risk attributes: The certified products, under identical maturity, loan amount, income and loan-to-value ratio – i.e. the factors influencing the pricing of products the most – had consistently lower interest rate spread compared to non-certified products. (*Chart 69*).

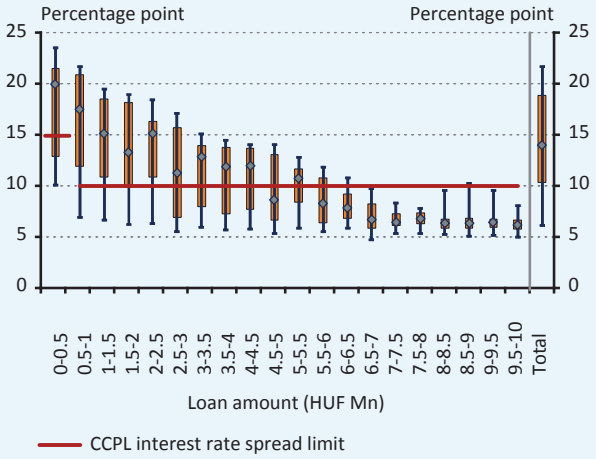
Chart 69
The average APRC spread for CCHL and non-certified housing loans for different risk characteristics



Note: The interest rate spread was calculated as the difference between the APRC and the 3-month BUBOR in the case of variable interest rates, and the BIRS yield with the corresponding maturity in the case of interest rate fixation over one year.

Source: MNB

Chart 70
Interest rate spread distribution of newly disbursed personal loans



Note: Personal loans issued by credit institutions in the 12 months before the state of emergency (March 2019 - February 2020). On the horizontal axis, in brackets, we indicate the volume ratio of products that could potentially be classified in terms of the interest rate premium limit.

Source: MNB

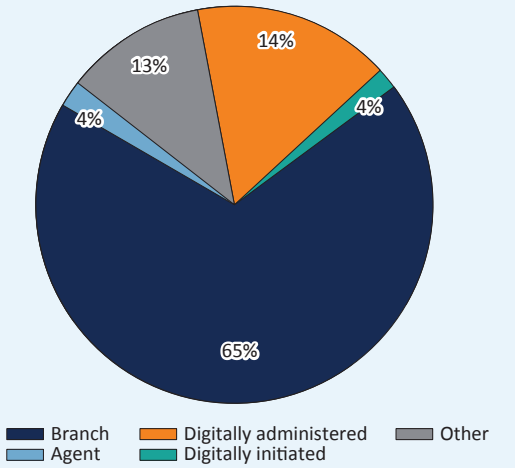
13.2 THE EXPANSION OF THE CERTIFIED CONSUMER-FRIENDLY FRAMEWORK CONTINUES IN THE HOME INSURANCE AND PERSONAL LOAN MARKETS

The efficiency of the Hungarian home insurance business may be improved by extending the certification framework to home insurances. The Certified Consumer-friendly Home Insurances (CCHI), available to consumers since March 2020, provide customers with high-quality services, without superfluous extra services and expenses, in an easily comparable manner. The CCHI products, in addition to stimulating competition in the home insurance market and their favourable consumer protection features, also contribute to increasing financial stability through the more efficient functioning of the insurance market serving the maintenance of the real estate collateral value of housing loans.

The MNB supports the stimulation of the competition in the banking sector and encourages improvement in the digitalisation of banks also by extending the Certified Consumer-friendly product certification to personal loans. The key considerations for the development of the Certified Consumer-friendly Personal Loan (CCPL) product were the predictability of instalments, the simple comparability of the certified offers, and through that strengthening competition in the personal loan market and the reduction of interest rate spreads. Accordingly, the CCPL product will be free purpose loans with maximum maturity of 7 years and interest rate fixed for the whole tenor. The applicable maximum interest rate spread over the reference rate chosen by the lender was set to 15 percentage points up to a loan amount of HUF 500,000 and 10 percentage points over HUF 500,000, which – compared to the present market practices – necessitates lower pricing at most institutions (*Chart 70*). Upon increased market competition, this may lead to material savings at the borrowers.

The CCPL certification also has important consumer protection elements. Accordingly, the deadlines connected to the CCPL products – disbursement deadline, deadline for the recognition of prepayment – will be maximised. Uniform and transparent fee structure, more favourable than the statutory maximum will be applied to the CCPL products. In order to increase financial awareness, warning and information of uniform structure and content will be mandatory.

Chart 71
Retail personal loan disbursement by method of sale



Note: data as of 01.2020-06.2020, by volume, credit institution sector.
Source: MNB.

CCPL products also support the development of online lending processes, which gained importance due to the coronavirus. The certified personal loan products will be available through fully online borrowing process from April 2021 to existing customers and from July 2021 to all customers. The MNB expects that as a result of this the CCPL products will also strengthen increasing utilisation of the online sales channels, which is still low at present, but continuously increasing during the coronavirus pandemic (*Chart 71*). This, in addition to the advantages for the consumers, may also increase the efficiency of lenders' operation, thereby contributing to sustainable profitability.

Annex: International comparison of instruments used to measure cyclical systemic risks

FINANCIAL SYSTEMIC RISK MAPS WITH DETAILED DOCUMENTATION

Belgium: National Banks of Belgium (2019): *Financial Stability Report, 2019*, 129–148.

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Endnotes

[1] The definitions of the more important monitored indicators are as follows. *Standardised credit-to-GDP gap:* The deviation of the GDP-proportionate outstanding lending from its long-term trend, calculated in accordance with the baseline scenario specified in the ESRB methodological recommendation (ESRB/2014/1, https://www.esrb.europa.eu/pub/pdf/recommendations/140630_ESRB_Recommendation.en.pdf). *Additional credit-to-GDP gap:* A version of the standardised credit-to-GDP gap calculated in accordance with a methodology modified for the special features of the Hungarian financial system. For more details, see: https://www.mnb.hu/letoltes/ccyb-modszertan-uj-hu-1.pdf. *Multivariate additional credit-to-GDP gap:* The version of the additional credit-to-GDP gap calculated with the help of the indicators measuring economic developments related to the credit cycle and compiled based on accurate statistical requirements. For more details, see: Kocsis L. and Sallay M. (2018): Credit-to-GDP gap calculation using multivariate HP filter, MNB Occasional Papers, No. 136. https://www.mnb.hu/letoltes/mnb-op-136-final-1.pdf

[2] The index is a rapid-reaction indicator efficiently capturing the fundamentals of the financial system, which reflects the current stress level of the financial system considering the individual submarkets of the financial system as a whole, bearing in mind the co-movements. For the details of the creation of the index, see Szendrei T. and Varga K. (2017): FISS – A factor-based index of systemic stress in the financial system, MNB Working Papers, No. 2017/9. https://www.mnb.hu/letoltes/mnb-wp-2017-9-final-1.pdf.

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[7] https://www.mnb.hu/letoltes/vezetoi-korlevel-a-lakossagi-jelzaloghitelekhez-szukseges-onero-penzugyi-intezmenyek-altali-ertekelesevel-kapcsolatos-elvarasokrol.pdf

[8] For more details on the identification methodology and the methodology for calibrating the capital buffer rates of other systemically important institutions, see the MNB's Methodological note: https://www.mnb.hu/letoltes/modszertani-tajekoztato-en-honlap.pdf.

[9] MREL: the minimum requirement for the liabilities that can be written down or converted (Minimum Requirement for Own Funds and Eligible Liabilities).

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[12] Recommendation No. 9/2019 (IV.15) of the Magyar Nemzeti Bank on the interest rate risk of the variable-rate mortgage loans and on fostering the provision of information on the management thereof

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[14] Directive 2014/92/EU of the European Parliament and of the Council (23 July 2014) on the Comparability of fees related to payment accounts, payment account switching and access to and use of payment accounts with basic features

[15] Government Decree 144/2018 (VIII.13.) on certain issues related to the information about the fees for consumer payment accounts

[16] https://pad.mnb.hu/

[17] https://alk.mnb.hu/fogyasztoknak/alkalmazasok/szvp

[18] Both applications can be accessed through the Financial Navigator site operated by the MNBhttps://www.mnb.hu/fogyasztovedelem/penzugyi-navigator

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[26] https://www.mnb.hu/letoltes/lakossagi-zold-hitelezes-magyarorszagon.pdf és https://www.mnb.hu/letoltes/tajekoztato-zold-kedvezmeny-2020-julius.pdf

[27] In 2019 CBI estimated the value of all green bonds issued by the private and the public sector in USD 258 billion, which is an increase of 51 percent compared to 2018. Source: 2019 Green Bond Market Summary, Climate Bond Initiative, February 2020

[28] Examples of the issuance of EU green covered bonds, DE: Berlin Hyp, Kfw, LBBW, Deutsche Hypo; DK: Nykredit, Danske Bank; FR: Société Générale, Groupe BPCE; NO: DNB, Spabol (Sparebank1), Sparebanken Sor; PL: PKO, ING Hipoteczny; SE: Landshypotek Bank, SCBC (SBAB group). All of these issuances complied with the Green Bond Principles and almost half of the examples satisfied the requirements of the Climate Bond Standard certificates.

[29] Based on Article 2 c) of the Paris Agreement concluded by the members of the United Nations Framework Convention on Climate Change (UNFCCC)

[30] Network of Central Banks and Supervisors for Greening the Financial System: https://www.ngfs.net/en

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Count István Széchenyi

(21 September 1791 – 8 April 1860)

Politician, writer, economist, minister for transport in the Batthyány government whom Lajos Kossuth referred to as 'the greatest Hungarian'. His father, Count Ferenc Széchényi established the Hungarian National Museum and Library; his mother, Julianna Festetich was the daughter of Count György Festetich, the founder of Georgikon, an institution for the teaching of agricultural sciences.

With his ideas – whose message remains relevant even today – and his activities both as a writer and a politician, István Széchenyi laid the foundation for modern Hungary. He is one of the most eminent and significant figures in Hungarian politics whose name is associated with reforms in the Hungarian economy, transportation and sports. He is also known as the founder and eponym of numerous public benefit institutions, a traveller all across Europe and an explorer of England as well as the champion of economic and political development at the time. István Széchenyi recognised that Hungary needed reforms in order to rise, and considered paving the way for a Hungary set on the path of industrialisation and embourgeoisement to be his calling in life.

Published in 1830, his Credit outlined the embourgeoisement of Hungary and summarised its economic and social programme. Count Széchenyi intended this writing to make the nobility aware of the importance of the country's desperate need for a social and economic transformation. Another work of his, Stádium [Stage of Development] (1833) listed the cornerstones of his reform programme in 12 points, including the voluntary and compulsory liberation of serfs; the abrogation of avicitas (inalienable status of noble property); the right of possession for the peasantry; and the freedom of industry and commerce. This work of Széchenyi already conveyed the idea of equality before the law and the general and proportionate sharing of taxation.

After the revolution in 1848 István Széchenyi joined the Batthyány government and as minister embarked vigorously on implementing his transportation programme.

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