ANNUAL FINANCIAL STABILITY REPORT

National Bank of Serbia

2020

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Introductory note

Financial stability means that the financial system – financial intermediaries, financial markets and financial infrastructures – is capable of ensuring efficient allocation of financial resources and fulfilling its key macroeconomic functions even if financial imbalances and shocks occur in the domestic and international environment.

Under conditions of financial stability, economic agents have confidence in the banking system and ready access to financial services, such as payments, lending, deposits and risk hedging.

Articles 3 and 4 of the Law on the National Bank of Serbia (RS Official Gazette, Nos 72/2003, 55/2004, 85/2005 – other law, 44/2010, 76/2012, 106/2012, 14/2015, 40/2015 – CC decision and 44/2018) mandate the National Bank of Serbia to contribute, without prejudice to its primary objective, to maintaining and strengthening of the stability of the financial system, and to determine and implement measures and activities to that effect. In striving to achieve this statutory objective, the National Bank of Serbia actively cooperates with other relevant state and international institutions.

As part of the above measures and activities, the National Bank of Serbia undertakes regular and comprehensive analyses of macroeconomic environment and functioning of key financial institutions, markets and infrastructure; identifies risks that pose a threat to the stability of the financial system; identifies trends that may increase the vulnerability of the financial system; and launches debate on new regulatory initiatives and their potential effect on the financial system and the real sector of the economy. The National Bank acts both preventively and correctively by changing the financial regulatory framework. If necessary, the National Bank also manages the consequences of external shocks and other crisis situations, lessening potentially negative effects on financial stability.

The *Financial Stability Report* aims to provide information about the situation in the financial system, identify potential risks to financial stability and raise awareness of economic agents to those risks. We expect the Report to contribute to improved transparency and strengthened confidence in the domestic financial system, which will underpin its stability and support a stable and sustainable economic growth.

The analyses in the *Report* were prepared by the Financial Stability Department. The *Report* uses data available as at end-2020.

The *Financial Stability Report* was adopted by the National Bank of Serbia's Executive Board in its meeting of 10 June 2021. Earlier issues of the Report are available on the National Bank of Serbia's website (http://www.nbs.rs).

Executive Board of the National Bank of Serbia:

Jorgovanka Tabaković, Governor
Željko Jović, Vice Governor
Ana Ivković, Vice Governor
Dragana Stanić, Vice Governor

ABBREVIATIONS

ARIMA – Autoregressive Integrated Moving Average
ASB – Association of Serbian Banks
BIS – Bank for International Settlements
bn – billion
bp – basis point
CAR – Capital Adequacy Ratio
CESEE – Central, Eastern and Southeastern Europe
DvP – Delivery vs. Payment
EBA – European Banking Authority
ECB – European Central Bank
EMBI – Emerging Markets Bond Index
EU – European Union
FDI – foreign direct investment
Fed – Federal Reserves
GDP – gross domestic product
GSFR – Global Financial Stability Report
IFEM – Interbank Foreign Exchange Market
IMF – International Monetary Fund
lhs – left hand scale
IPS – Instant Payments Serbia
LtD – Loan-to-Deposit ratio
LtV – Loan-to-Value ratio
mn – million
NPL – non-performing loan
pp – percentage point
Q – quarter
rhs – right hand scale
RTGS – Real Time Gross Settlement
s-a – seasonally adjusted
VAT – value added tax
VPFs – voluntary pension funds
y-o-y – year-on-year

Other generally accepted abbreviations are not cited.

Key risks	Mitigating measures
External risks:	
– uncertainty concerning the evolution of the corona pandemic, availability of vaccines, the speed of their rollout, and impact on global economic developments; – risk of uneven global recovery as some countries are more severely hit by the pandemic; – elevated uncertainty over global public finance in the coming period and rising risk premia of euro area economies; – pace of normalisation of economic policies after the pandemic; – tightening of conditions in international financial and commodity markets and capital outflows from emerging economies; – slower recovery of international capital markets and aggravated conditions of corporate financing in an environment of banks' increased risk aversion; – a decline in solvency and liquidity of parent banks and withdrawal of liquidity from the markets where these banks operate; – exposure of financial institutions to climate change risks; – an increase in the number of cyber incidents and potential risks to the financial system in an environment when institutions have remote access to information resources due to the pandemic.	– adequate and timely economic policy measures to support the sectors most severely hit by the pandemic and preservation of the labour market; – continued cautious conduct of monetary and fiscal policy to maintain the achieved macroeconomic stability; – ensuring additional liquidity through swaps and repo transactions with foreign central banks and other monetary authorities; – adequate conduct of macroprudential policy to preserve the achieved level of stability and further strengthen the resilience of the financial system; – further development of the capital market and new financial instruments; – preservation of the banks' domestic deposit base and ensuring that loans remain fully covered by domestic deposits; – cooperation with international financial institutions and supervisors of home banking groups; – regulatory incentives to finance ecologically acceptable solutions in order to support transition to the green economy; – increasing resilience of information systems of financial institutions and limiting the number of cyber incidents.

Key risks	Mitigating measures
Internal risks:	
– uncertainty as to the course of the pandemic and potential negative effects on domestic macroeconomic trends due to the potential re-introduction of containment measures;	– preservation of the achieved macroeconomic and fiscal stability to continue providing support to businesses and households in order to remedy the negative effects caused by the pandemic; – adoption of the Programme of Economic Measures to Mitigate the Negative Effects of the COVID-19 Pandemic and Support the Serbian Economy and support to businesses and households; – adoption of decisions to ease the borrowers' financial position and facilitate their access to funding during the pandemic; – enabling banks to use a part of funds allocated for capital buffers for the purpose of facilitating the financing of households and businesses in the aggravated conditions caused by the pandemic; – providing dinar and FX liquidity to banks for the purpose of lending to the private sector by organising additional swap auctions and repo securities purchase auctions; – maintaining a pre-emptive repo line with the ECB in order to ensure, in case of need, additional euro liquidity to the domestic financial system; – timely adopted macroprudential measures that help target and identify financial system vulnerabilities;
– a high level of euroisation of the domestic financial system;	– continued implementation of measures and activities envisaged by the new Strategy of Dinarisation of the Serbian Financial System, primarily the preservation of price and overall macroeconomic stability; – application of microprodudential and macroprudential regulations and measures, and monetary policy measures, in order to further encourage lending in the domestic currency; – continued promotion of dinar savings and dinar financial instruments; – stepped-up issues of dinar government securities in the domestic securities market to ensure a further reduction in the currency risk;

Key risks	Mitigating measures
Internal risks:	
	– facilitating access to the domestic market of government securities for foreign investors, helping increase market efficiency; – differentiation of remuneration rates for dinar required reserves vs. FX required reserves; – promoting FX hedging instruments;
– potential build-up of new NPLs if the pandemic continues;	– adoption of decisions to ease the financial position of borrowers in order to prevent the build-up of new NPLs during the pandemic; – stipulating measures and activities that financial institutions are obliged to apply in order to adequately manage credit risk; – enhancing monitoring of bank asset quality, particularly in the sectors hit hardest by the pandemic; – continued strengthening of the banks' capital base;
– potential consequences of climate changes on the economy and, as a result, on the financial sector, through materialization of physical and transition risks.	– development of the framework for the analysis of the scope of impact of climate changes on the economy and the financial sector, and development of methodologies to calibrate measures for pre-emptive action and mitigation of consequences of climate changes.

Contents

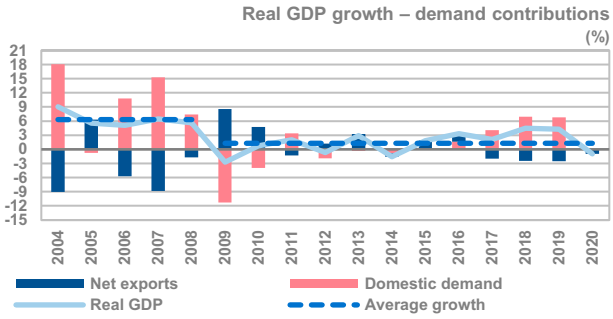
Overview

In the first half of 2020, the global coronavirus pandemic triggered a powerful contraction of global economic activity and changes in consumer and corporate behaviour amid heightened uncertainty. The incipient global recovery was slowed in mid-2020 with the onset of the second wave of the pandemic. Though the second wave led to a reinstatement of containment measures from mid-October 2020, economic activity fell much less in the fourth than in the second quarter, thanks to robust monetary and fiscal stimuli in many countries. The International Monetary Fund projects global growth to measure 6.0% in 2021 and 4.4% in 2022.

Compared to 2019 when global growth measured 2.8%, the world's economy slumped in 2020 by 3.3%, mostly on account of a 4.7% economic downturn in advanced economies. Economic activity in the euro area, Serbia's most important financial and trade partner, subsided by 6.6% in 2020 (compared to 1.3% growth recorded in 2019). Europe is expected to see economic growth in 2021, with the same growth rate (4.4%) anticipated in the euro area and in emerging and developing European economies. During 2020, the ECB kept its main refinancing rate (0.00%), marginal lending facility rate (0.25%) and deposit facility rate (-0.50%) unchanged. It also temporarily expanded the volume of its net private sector asset purchases, gave more favourable conditions for long-term lending to banks through its targeted longer-term refinancing operations, and launched a new asset purchase programme (PEPP) and additional longer-term refinancing of banks (PELTROs). In March 2020, the Fed lowered the range for its Fed funds rate twice, by a total of 150 bp to 0.0–0.25%, and re-embarked on its quantitative easing programme (QE). From March 2020, the Fed launched temporary repo transactions and international repo transactions (FIMA Repo Facility) providing dollar liquidity to foreign central banks and other monetary authorities.

Serbia's GDP fell by only 1.0% in 2020, an outturn which is among the best in Europe and higher than expected at the onset of the pandemic. Inflation remained low and stable in 2020 as well, averaging 1.6%. Low inflationary pressures are also signalled by one- and two-year ahead inflation expectations of the financial and corporate sectors which are firmly anchored and remain below the target midpoint.

In the conditions of pandemic-induced global uncertainty, Serbia's economic activity decreased by only 1.0%, an outturn which is among the best in Europe and higher than expected at the onset of the pandemic. Thanks to the successfully implemented fiscal consolidation, initiated structural reforms and upgrade of the investment environment in prior years, grounds were laid for accelerated economic growth over the medium-term. In addition, sound macroeconomic fundamentals and robust monetary and fiscal policy measures enabled Serbia to weather the COVID-19 crisis more easily than most European countries. GDP is expected to grow by 6% in 2021. The largest positive contribution will come from construction and industrial output growth, but recovery is also expected in those service sectors which were hardest hit by the current pandemic as successful vaccination continues.



Sources: NBS and SORS.

Monetary policy was eased further in 2020, amid uncertainty caused by the COVID-19 pandemic. The macroeconomic and fiscal stability achieved in the prior period, and the timely taken monetary and fiscal policy measures, helped keep Serbia's credit rating one notch below investment grade. The achieved economic policy results were also confirmed in February 2021 when it was announced that Serbia's dinar-denominated bonds will be included in J. P. Morgan's GBI-EM family of indices in June 2021.

The Republic of Serbia timely responded to the challenges posed to the economic policy by the COVID-19 health crisis. The robust package of economic measures taken to alleviate the negative effects of the pandemic temporarily pushed up public debt, but it still remained among the lowest in Europe. The share of central government public debt in GDP rose from 52.0% at end-2019 to 57.4% of GDP at end-2020. The share of external debt in GDP also increased to 66.3% of GDP (61.5% at end-2019).

Inflation remained low and stable for the seventh year in a row, averaging 1.6% in 2020. The NBS continued to pursue a cautious monetary policy stance, deciding to trim the key policy rate four times in 2020 to 1.0%, its new lowest level in the inflation targeting regime. Year-on-year inflation is expected to hover around the target midpoint until Q1 2022. It is anticipated to slow thereafter and move within the lower bound of the target tolerance band (3±1.5%), as the effect of temporary factors, notably higher price of oil and primary agricultural commodities, wears off.

To support the domestic financial system and overall economic flows amid the COVID-19 pandemic, the NBS provided additional dinar liquidity to banks by organising repo auctions of dinar securities purchases and additional FX swap purchase auctions, as well as through bilateral purchases of dinar government and corporate bonds from banks in the secondary market. The achieved macroeconomic and fiscal stability and the timeliness of monetary and fiscal policy measures were confirmed by the fact that Fitch and Standard & Poor's affirmed Serbia's ratings in 2020, despite the global pandemic-induced crisis. Additionally, Moody's upgraded Serbia's rating in March 2021 to Ba2, with a stable outlook, while Fitch affirmed its rating at BB+, a step away from investment grade.

The downward trend in the share of public debt in GDP was halted temporarily in 2020 amid the coronavirus pandemic and measures taken to suppress its negative effects. The share of central government debt in GDP measured 57.4% at end-2020, up by 5.4 pp relative to end-2019. Though the share of public debt in GDP went up, its currency composition improved significantly in 2020, as the share of debt in US dollars decreased by as much as 6.9 pp from last year, while the share of dinar and euro debt expanded by 2.8 and 5.4 pp, respectively. The significant contraction in the dollar portion of debt resulted from early buyback of a part of costly dollar eurobonds issued in 2011. Serbia issued the euro-denominated eurobond worth EUR 2 bn in May 2020 and US dollar eurobond worth USD 1.2 bn in November. Within the latter issue, Serbia carried out its first-ever hedging via swap operations, whereby it swapped liabilities under the eurobond from the US dollar to the euro. Though the share of FX denominated public debt measured 69.5% at end-2020, the FX risk is lower thanks to a rising share of dinar debt. The current account deficit equalled 4.3% of GDP in 2020 and was fully covered by FDI for the sixth year in a row – 146.5% coverage at end-2020. External debt equalled EUR 30.8 bn at end-2020 or 66.3% of GDP, up by 4.8 pp from end-2019. The fiscal

deficit measured 8.1% of GDP in 2020, as a result of the large-scale assistance package to corporates and households to mitigate the negative effects of the coronavirus pandemic.

Foreign exchange reserves of the NBS increased by EUR 113.2 mn in 2020. At end-December, they measured EUR 13.5 bn in gross and EUR 11.1 bn in net terms, further strengthening the resilience of the domestic system to shocks from the international environment. Different stress scenarios confirm that the end-2020 level of FX reserves was more than sufficient, even in case of extreme shocks, to preserve financial sector stability, settle government liabilities to foreign creditors, and, in times of crisis, finance any major balance-of-payments imbalances.

In 2020, foreign exchange reserves remained high and stable, despite the challenges posed by the pandemic. Gross FX reserves equalled EUR 13.5 bn at end-December 2020, up by EUR 113.2 mn from end-2019, while net FX reserves measured EUR 11.1 bn.

Domestic corporate loans, excluding the exchange rate effect, increased by 9.1% in 2020. Thanks to the effects of past monetary easing and the approval of loans from the Guarantee Scheme on favourable terms, interest rates on dinar corporate loans came close to rates on euro-indexed loans. The share of dinar receivables in total receivables increased from 2019 by 7.1 pp to 21.0%, reflecting the approval of working capital and liquidity loans to corporates, partly also under the Guarantee Scheme. The largest absolute increase in receivables was recorded in transport and warehousing, hospitality and catering services, and information and communications sectors. By maturity, long-term receivables prevail, accounting for 85.1% and indicating a low refinancing risk. Due to economic relief measures, corporates saw an increase in employment, followed by higher profitability. Hence, despite pandemic-induced impediments to doing business, favourable trends prevailing in the past five years continued. From the aspect of size, large, medium and small-sized enterprises were profitable in 2020. Micro enterprises were the hardest hit by the crisis, recording a negative net financial result in 2020. The share of NPLs in total corporate loans dipped by 0.1 pp y-o-y to 3.1% in December 2020.

During 2020, thanks to the implemented economic measures taken to support the economy and despite numerous challenges posed by the COVID-19 crisis, corporates continued to operate at a profit, as in the prior period. Even in the face of potential risks caused by the emergency health situation, corporate loans continued to contribute significantly to y-o-y growth in total lending. The share of corporate NPLs subsided further in 2020 as well.

The labour market operated in extraordinary circumstances in 2020 due to the COVID-19 pandemic. Due to introduced measures, the share of work from home and absences from work increased, but the unemployment rate remained single-digit. Dinar household (resident) savings continued to rise in 2020, reaching RSD 92.5 bn at year-end, up by 13.5 bn from end-2019. Excluding the exchange rate effect, total household loans gained 11.4% in 2020. Cash and housing loans were the dominant loan category. To suppress the negative effects of the coronavirus pandemic, the NBS

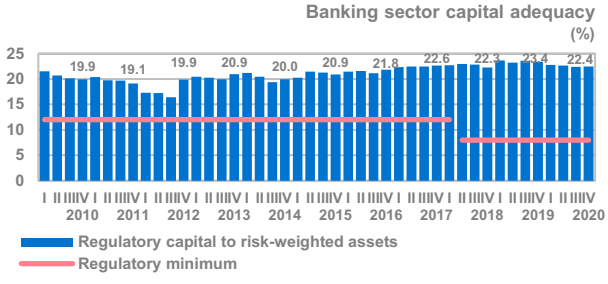
The crisis caused by the coronavirus pandemic called for restrictive measures to preserve human health and lives. Thanks to timely economic policy measures, the labour market did not feel significant consequences. Even in such aggravating circumstances, dinar savings continued to rise, reflecting further growth in households' confidence in the local currency and the banking sector, which is very significant, especially in times of crisis.

took a range of measures to facilitate existing debt repayment and access to financing for households. The share of NPLs in total gross household loans measured 3.6% in December 2020, down by 0.3 pp from end-2019.

Whereas trade in the real estate market oscillated in Q2 2020 due to the COVID-19 pandemic, recovery ensued in Q3 already, as reflected in increased activity in this market. In 2020, the value of construction works in the territory of the Republic of Serbia was only 4.4% lower, in constant prices, than in 2019. The level of NPLs continued to decrease which, coupled with higher lending, brought down the share of NPLs in total loans of the construction sector by 1.1 pp y-o-y.

According to the results of the bank lending survey, demand for housing loans continued up in 2020. Banks assessed that demand growth was supported by households' need to buy real estate, while the overall economic situation worked in the opposite direction. As a result of favourable trends in the real estate market and banking sector competition, banks eased household lending standards for FX-indexed housing loans in Q4 2020. Increased lending activity in this area (both the value and the number of loans went up) and registered employment in construction, which on average reached its highest level since 2009, are also indicators of construction sector growth in 2020. NPLs continued to decline which, coupled with higher lending, brought down the share of NPLs in total construction sector loans to an all-time low of 2.7% in December 2020.

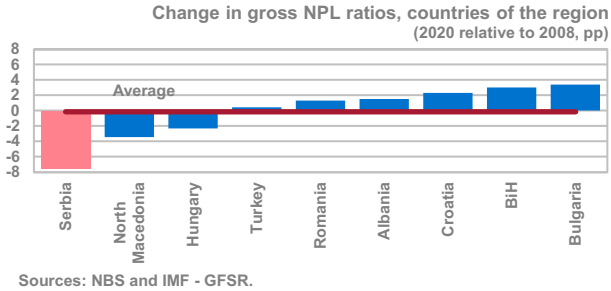
Even during the coronavirus pandemic in 2020, Serbia's banking sector, accounting for over 90% of financial sector assets, was stable, thanks to adequate capitalisation, high liquidity and profitability.



Source: NBS.

With a capital adequacy ratio of 22.4% at end-2020, capitalisation of Serbia's banking sector was above the regional average. The average monthly liquidity ratio of the banking sector was 2.2, well above the prescribed minimum (1.0). The banking sector posted a positive financial result in 2020: ROA equalled 1.1% and ROE – 6.5%. At end-2020, the share of NPLs in total banking sector loans was 3.7%, down by 0.4 pp from end-2019 and by 18.5 pp from August 2015, when the NPL Resolution Strategy was adopted. In addition to the implemented activities and measures for resolving NPLs, the decline in the share of NPLs in 2020 was further facilitated by NBS measures to mitigate the negative effects of the COVID-19 pandemic, as well as by credit activity growth. At end-2020, lending by domestic banks recorded stable and sustainable growth of 9.9%, excluding the exchange rate effect, supported by both demand and supply-side factors. The results of the bank lending survey suggest that corporate and household lending terms were more favourable in case of dinar loans.

Increased lending, systemic NPL resolution, and NBS measures to contain the negative effects of the COVID-19 pandemic led to a decrease in the share of NPLs in total loans in 2020 to its lowest level on record.



Sources: NBS and IMF - GFSR.

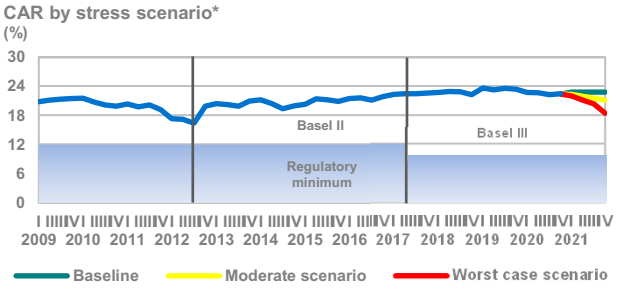
The strengthening of the domestic deposit base enabled banks to decrease their dependence on other sources of funding, such as funding by their parent banks, thereby reducing their exposure to risks emanating from the international environment. Banks operating in Serbia rely predominantly on domestic, stable sources of funding, as indicated by the amount of deposits which was sufficient to cover the amount of loans in 2020. The currency structure of deposits improved further in 2020, due in part to the implementation of the robust direct government assistance package to corporates and

Domestic deposits were a dominant source of funding.

households to mitigate the negative economic consequences of the coronavirus pandemic.

The results of macroprudential stress-tests confirm that the banking sector has sufficient capacity to absorb the consequences of the risks to which it could be exposed amid the coronavirus pandemic. The banking sector CAR meets all of the prescribed capital adequacy regulatory minimums and all of the requirements for the coverage of capital buffers as well, and would remain above the regulatory minimum even in the worst-case scenario.

The results of macroprudential stress tests confirm that Serbia's banking sector as a whole remains highly resilient to the assumed shocks, including the most severe ones, and that it has sufficient capacity to absorb the consequences of the risks to which it could be exposed amid the coronavirus pandemic.

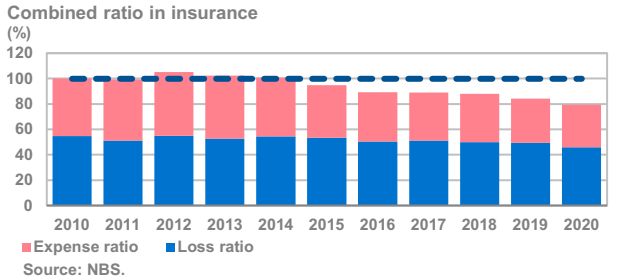


* NBS estimate.
Source: NBS.

Liquidity stress tests indicate that the liquidity ratio would remain above the regulatory minimum even in the worst-case scenario which implies a much bigger deposit withdrawal than the largest recorded in the domestic banking sector. Based on banking system analysis, the results of network modelling show that there is no major network potential for the transmission of shocks through the system.

The insurance sector ended the year 2020 with a positive net result after tax of RSD 12.9 bn. A positive trend was recorded in total premium, which equalled RSD 109.9 bn in 2020, up by around RSD 2.5 bn from 2019. The Serbian insurance sector is adequately capitalised given the risks it is exposed to, and it is highly liquid, which is an important factor when assessing asset quality. The main capital adequacy ratio was 228.8% for non-life and 249.4% for life insurance, which indicates high capital adequacy of insurance undertakings. In 2020, the NBS adopted different regulations to additionally regulate the insurance activity in the Republic of Serbia, creating preconditions for further convergence of Serbia's insurance sector to the EU insurance sector's level of development.

The insurance sector posted positive results in 2020 – it is adequately capitalised and profitable, with growth in total premium. (Re)insurance undertakings posted balance sheet growth, maintaining almost the same share in the financial sector balance sheet as in a year earlier. In 2020, the NBS adopted different decisions to ensure further development of the insurance market.



Source: NBS.

At end-2020, net assets of VPFs just topped RSD 47 bn, up by 3.9% from end-2019. Net assets increased by RSD 1.8 bn in 2020, while return on investment was much smaller than last year (by 82%) due to the fallout from the pandemic. The FONDex index reached 3,094.52 points at end-2020, up by 29.66 from end-2019. The annual return on FONDex, which is the weighted average return of all funds, equalled 1.0% in 2020, which is well below the return in 2019 (7.1%) and also much lower than the return on FONDex since the start of VPF operation (8.3%).

The COVID-19 crisis reflected on the results achieved by the VPF sector in Serbia in 2020. Net assets of VPFs continued to grow in 2020, but return on investment, worth around RSD 530 mn, decreased by 82% from the year before.

Balance sheet assets of financial lessors continued to grow in 2020. At end-2020, balance sheet assets stood at RSD 115.3 bn, up by 12% from end-2019. The share of NPLs in total loans decreased further. At end-2020, matured outstanding gross receivables (RSD 2.5 bn) made up 2.4% of gross financial lease receivables. The structure of lessees was still dominated by non-financial

The financial leasing sector continued to post positive results in 2020. The sector's balance sheet assets continued to rise and their quality improved thanks to a further decline in NPLs. In the face of potential risks caused by the emergency health situation amid the COVID-19 pandemic, in 2020 the NBS adopted a package of temporary measures relating to the leasing sector.

companies, with motor vehicles being financed most often. In addition, decisions were adopted in 2020 prescribing different measures and activities to overcome potential difficulties in the repayment of lease liabilities of households and corporates.

In 2020 as well, the NBS worked on improving the regulatory framework for payment services provision in order to achieve greater efficiency and transparency in the provision of these services and ensure better consumer information and protection. According to data for 2020, there was an increase in the number of almost all payment services provided and in e-money issuance, with cashless payments standing out in particular. Total number of e-banking users also went up in 2020.

In 2020, the NBS worked actively on enabling new manners of payment and introducing technological innovations in the payment services market to achieve further modernisation and improvement of payment transactions in Serbia. At end-2020, 14 payment institutions were licenced by the NBS to provide payment services. In addition, Western Union, MoneyGram, Ria Money Transfer and SmallWorld also operate in Serbia. These are four renowned global companies dealing in fast international money transfer, which perform these transactions via payment institutions and their representatives. According to data for 2020, there was an increase in the number of almost all payment services provided and in e-money issuance, with cashless payments standing out in particular. Relative to 2019, the total number of e-banking users rose by 14.83%, and that of m-banking users by 26.99%.

In 2020, the NBS adopted different decisions and measures to preserve price and financial stability and meet its legally defined objectives in the emergency circumstances caused by the pandemic.

Having in mind the need to maintain the achieved level of financial system stability in pandemic-induced circumstances, the NBS responded in an efficient, timely and adequate manner. Already in March 2020, it adopted the first measures and decisions to contain the negative consequences of the pandemic for the local financial system. All decisions and measures taken in 2020 were carefully calibrated and limited in duration, taking into account borrowers' potential difficulties in debt repayment and the need to overcome the negative effects of the COVID-19 pandemic on households and corporates. In this way, the NBS successfully facilitated the financial position of borrowers, thus reducing the possibility of occurrence of new NPLs, and preserved lending activity, high capitalisation and banking sector liquidity, while at the same time supporting the economic activity of the Republic of Serbia.

Overall financial stability was assessed based on the composite indicator of systemic stress and other financial soundness indicators.

The analysis of the systemic stress indicator in 2020 reveals an increase in systemic risk due to the negative impacts from the COVID-19 pandemic on financial markets in the first half of 2020. After that, systemic risk declined and levelled off, which was supported by the implemented fiscal, monetary and macroprudential policy measures aimed at strengthening Serbia's financial system stability.

I International and domestic environment

The coronavirus pandemic in 2020 caused a strong contraction in global economic activity. To mitigate the adverse effects of the pandemic, governments and leading central banks responded by accommodating their monetary policies and implementing different conventional and unconventional measures. The rise of uncertainty in the commodity and financial markets impacted the global rise in the risk premium. Of countries in the region, Serbia recorded the smallest GDP fall, equalling 1%, which was one of the best results in Europe. Serbia's EMBI risk premium on the dollar debt at end-December 2020 equalled 128 bp, and 143 bp on the debt in euros. Inflation in Serbia in 2020 was low and stable, measuring 1.6% on average. FX reserves were kept at an adequate and stable level, and amounted to EUR 13.5 bn gross (EUR 11.1 bn net) at end-2020. The preserved macroeconomic stability and favourable growth outlook, as well as the timeliness of monetary and fiscal policy measures in 2020, were confirmed by the fact that Fitch Ratings and Standard & Poor's kept Serbia's credit rating a step away from investment grade.

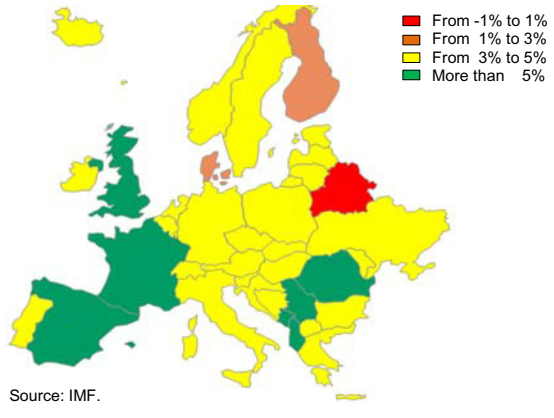
I.1 International environment risks

The coronavirus pandemic in the first half of 2020 caused a sharp contraction in global economic activity, as well as changes in consumer and corporate behaviour due to elevated uncertainty. In mid-2020, the incipient global economic recovery slowed down due to the second wave of the pandemic. Though this second wave caused a reinstatement of containment measures as of mid-October 2020, the fall in economic activity in Q4 was much softer than in Q2, thanks to the strong monetary and fiscal incentives in a number of countries. Progress in vaccine development raised investors' optimism and their readiness to invest. The rise in optimism was also suggested by movements in the euro area composite index of economic activity, which signals expansion, parallel with the improvement of the production activity in the USA and the majority of developing countries.

Global economy recorded a strong recovery in Q3 2020, after a sharp fall in the first half of the year. Compared to 2019 when global growth measured 2.8%, the world's economy slumped in 2020 by 3.3%, mostly on account of a 4.7% economic downturn in advanced economies. As for 2021, global growth is forecast to reach 6.0%, while the rate of 4.4% is expected for 2022.[1]

Growth in the euro area, with which we maintain key financial and trade relations, slowed down in 2020 to -6.6%[2] (1.3% y 2019). According to the April WEO, the IMF estimated that the biggest drop in the euro area in 2020 was recorded by Spain (-11.0%), followed by Italy (-8.9%), Greece and France (-8.2%), and Portugal (-7.6%). Growth in the largest euro area economies decelerated relative to 2019; thus, Germany recorded a GDP growth rate of -4.8%, France -8.1%, and Italy -8.9%. The European Economic Forecast from May 2021 estimated

Chart I.1.1 **GDP growth projections for 2021 − European countries**
(%)



Source: IMF.

[1] IMF WEO, April 2021.

[2] According to the Eurostat estimate.

the EU GDP growth in 2021 at 4.2%, and in 2022 at 4.4% (for the euro area, growth of 4.3% in 2021, and then of 4.4% in 2022).[3]

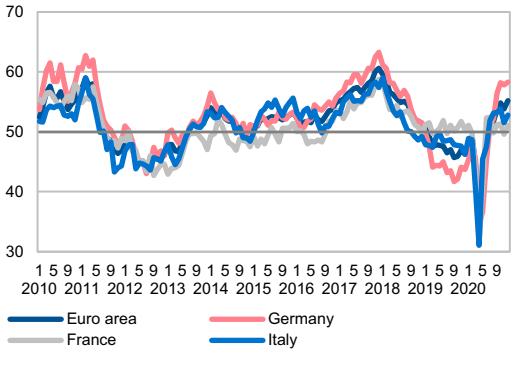
According to IMF data from April 2021, emerging and developing European countries[4] recorded a 2.0% fall in economic activity in 2020, and the lowest rates were recorded in Montenegro (-15.2%), Croatia (-9.0%) and Moldova (-7.5%). In the Balkan region,[5] the smallest GDP fall, in addition to Serbia (-1.0%), was recorded by Albania (-3.5%), Bulgaria (-3.8%) and Romania (-3.9%). In 2021, economic activity is expected to go up in Europe, and the euro area is likely to record the same growth rate (4.4%) as emerging and developing European countries (Chart I.1.1).

The second wave of the pandemic acted as a drag on the nascent global economic recovery. Many countries, notably in Europe, were forced to reinstate or tighten containment measures which affected the economic activity. This resulted in a fall in the service sector activity, while activity in the production sector showed resilience and continued up. Progress in vaccine development and availability at end-2020 was also reflected in the rising optimism in global financial markets, which recovered additionally despite the new wave of the coronavirus and the reintroduced containment measures. However, the speed of recovery differed greatly across the EU. During the pandemic, some countries were hit more than others, considering their level of dependence on sectors such as tourism, catering and transport, which suffered the most due to the pandemic. Because of this, some member states are expected to see their economic activity return to pre-pandemic levels by end-2021 or in early 2022, while recovery is predicted to take longer for others.

At the year level, real GDP fall in the USA in 2020 equalled 3.5%, relative to 2019, when it recorded growth (2.2%). This fall is attributable to a drop in personal consumption, and dampened exports and fixed investments.[6] According to the IMF's April 2021 estimate,[7] thanks to the fast vaccine rollout and a new USD 1,900 bn aid package for the US economy, which the new administration adopted, economic growth of 6.4% is expected for 2021, followed by a rise of 3.5% in 2022.

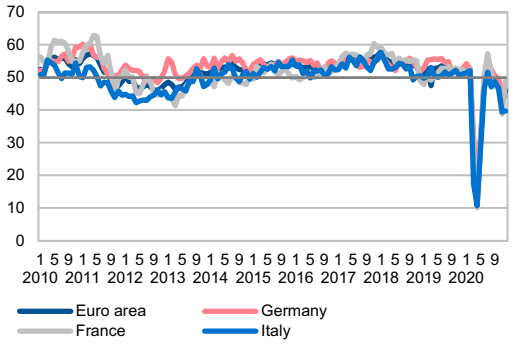
In December 2020, euro area PMI Manufacturing equalled 55.2 points,[8] which is more than at end-2019 (46.3 points). The highest value of this indicator was recorded in Germany (58.3 points), and the lowest in France (51.1 point) (Chart I.1.2). PMI Services in the euro area in December 2020 equalled 46.4 points and was lower than at end-2019 (52.8 points). As shown in Chart I.1.3, the lowest PMI in the services sector at end-2020 was recorded in Italy (39.7 points), and the highest in France (49.1 points). During 2020, PMI Manufacturing touched the lowest value in April and equalled 31.1 points (Italy), while in the euro area the figure was 33.4 points. PMI Services also reached its lowest value in April, equalling 10.2 points (France), while in the euro area it measured 12.0 points.

Chart I.1.2 **Activity indicator* (manufacturing)**
(index points)



* Purchasing Managers Index (PMI).
Source: Markit Group.

Chart I.1.3 **Activity indicator* (services)**
(index points)



* Purchasing Managers Index (PMI).
Source: Markit Group.

[3] European Economic Forecast.

[4] Russia, Turkey, Poland, Romania, Ukraine, Hungary, Belarus, Bulgaria, Serbia, Croatia, Albania, Bosnia and Herzegovina, Moldova, North Macedonia and Montenegro.

[5] Albania, Bosnia and Herzegovina, Bulgaria, Greece, North Macedonia, Serbia, Croatia and Montenegro.

[6] https://www.bea.gov/news/2021/gross-domestic-product-4th-quarter-and-year-2020-advance-estimate

[7] IMF WEO, April 2021.

[8] A reading of 50 or higher indicates economic expansion, while a reading of below 50 indicates economic contraction.

The euro area unemployment rate equalled 8.2% in December 2020, compared to 7.4% from December 2019. The EU unemployment rate was 7.4% in December 2020, up from 6.6% at end-2019. The lowest unemployment rate in December was recorded in the Czech Republic (3.0%), Poland (3.2%), the Netherlands (3.9%), and the highest in Spain (16.1%), Greece (15.8%), Italy (9.8%) and Lithuania (9.2%).[9] More serious consequences in the euro area labour market were avoided primarily owing to the implementation of the short-time work schemes and wage subsidies.

After a historical minimum in January and February 2020 (3.5%), the US unemployment rate began to rise in March, amid the pandemic-induced crisis, and in April reached its historical maximum of 14.8%, which is also its highest level since World War Two. After economic policy makers took certain measures, the unemployment rate embarked on a gradual downward path, first coming down to 11.1% in June, and then to 7.8% in September, only to decrease further in Q4 and equal 6.7% in December. Composite PMI in the USA reached a minimum in April (27.0 points), and began to recover in the following months, ending the year at 55.7 points. Although the value of this index in December was lower than in November, it was still high above the 50.0-point boundary, which separates the expansion and contraction territories, indicating the still strong growth of economic activity in December. At the start of 2021, Composite PMI continued up and exceeded 60.0 points in April, signalling further expansion in economic activity.

The prices of the majority of primary commodities have been recovering since mid-2020, in line with the gradual loosening of containment measures and the rising demand. The global price of oil went down significantly in Q1, by 67.7% to USD 21.5 per barrel. This decline in the oil price was facilitated by dampened demand amid the introduced measures to counter the pandemic. These measures directly affected the transport sector, resulting in fully packed oil storage facilities, but also giving rise to concerns about the impact of the pandemic on oil demand going forward, which overcame the optimism regarding the adopted economic stimuli. The fall in the price of oil was under the influence of the failure of OPEC+ members to agree on capping the production, with failed negotiations between Saudi Arabia and Russia. Although the global price of oil later recovered gradually, until the end of 2020 it remained below the level from end-2019. The global price of oil initially went down in October, by almost 10%, to USD 36.9 per barrel, as a consequence of the deteriorating health situation in the USA, announcements of new containment measures in Europe, stepped-up output in Libya and Iraq, and data about rising inventories in the USA. Afterwards, the price started to go up, supported in November by increased risk propensity, weakening of the dollar, data about depleting crude oil inventories in the USA, expanded sanctions on Iran and US sanctions on Venezuela. In early December, OPEC and Russia agreed to increase the daily output by 500,000 barrels a day starting from 1 January 2021, which is less than previously agreed (2 mn barrels a day), therefore the price of oil went up further. Also, investors' optimism was on the rise in terms of oil demand and, in turn, the price of oil went up, hence at end-Q4 it equalled USD 51.2 per barrel, meaning that the price was lower than at end-2019 (USD 66.4 per barrel).

At end-December 2020, the European Commission and the UK reached a Trade and Cooperation Agreement (TCA) stipulating the terms of their future cooperation, which lowered the cost of the UK's withdrawal from the single market and the customs union. The TCA, which came into effect on 1 January, ensures the continuation of customs-free trade for the majority of goods and creates a basis for future cooperation between the EU and the UK on issues such as fight against crime, data exchange and trade in energy.

In addition to the effects of the pandemic, trade and geopolitical tensions – notably between the USA and China, remained pronounced during 2020, especially in the area of international trade, intellectual property rights and cyber security. They disturbed the investment climate, leading to a rise in uncertainty as to global economic developments.

I.1.1 ECB and Fed's monetary policy and overview of economic developments in 2020

In 2020, the ECB kept its rates unchanged – the main refinancing operations rate at 0.00%, marginal lending facility rate at 0.25% and the deposit facility rate at -0.50%. In March, the ECB decided to additionally expand the volume of the net Asset Purchase Programme (APP), offered more favourable conditions for approving long-term loans and in an unscheduled meeting it also adopted a new Pandemic Emergency Purchase

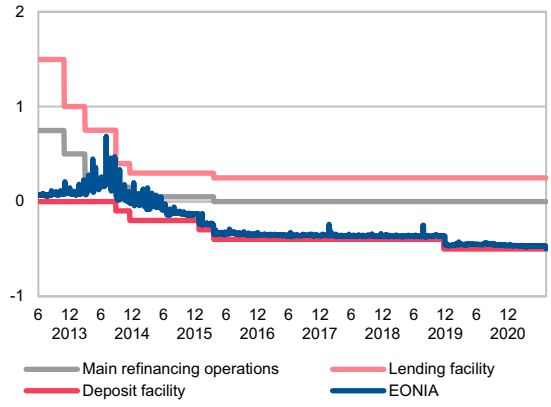
[9] According to Eurostat's preliminary flash estimate, as at the beginning of May 2021.

Programme (PEPP). In April, it decided to introduce a new bank lending programme (PELTROs) to ensure additional liquidity to the financial system. In March 2020, the Fed trimmed its federal funds target range twice, by a total of 150 bp, to 0.0–0.25%, and decided to relaunch the quantitative easing programme (QE). In addition, as of March, the Fed started implementing temporary repo transactions, as well as international repo transactions which supplied additional dollar liquidity to foreign central banks and other monetary authorities (FIMA Repo Facility).

During 2020, the ECB did not change its main refinancing operations rate (0.00%), or rates on marginal lending (0.25%) and deposit facilities (-0.50%). In the March meeting, the ECB made a decision on a temporary EUR 120 bn increase in the net Asset Purchase Programme (APP) by end-2020, in order to provide the real sector with financial support in conditions of rising uncertainties. More favourable terms for banks within the long-term refinancing operations programme (TLTROs III) were approved for the period between June 2020 and June 2022, at an interest rate 50 bp lower than the main refinancing operations rate. In an unscheduled meeting in March, the ECB introduced a new Pandemic Emergency Purchase Programme (PEPP) in the amount of EUR 750 bn, whose volume was increased to EUR 1,850 bn during 2020. Originally, the PEPP was to last until end-2020, but was later extended until end-March 2022. In April, the ECB decided to introduce new Non-Targeted Pandemic Emergency Longer-Term Refinancing Operations (PELTROs) to provide liquidity support to the financial system and enable a normal functioning of the money market. In January 2020 the ECB began its monetary policy strategy review, with the deadline for completion extended from end-2020 to the second half of 2021. In October, the ECB published a report in which it considered the possibility of issuing a digital euro, an electronic form of the central bank's money that would be available to all citizens and corporates.

The Fed's reaction to elevated uncertainty and the crisis caused by the coronavirus was to trim the federal funds rate and introduce a number of unconventional monetary policy measures. In March 2020, the Fed lowered its rate range twice, by a total of 150 bp, to 0.0–0.25%. In the second unscheduled meeting in March, it decided to relaunch the quantitative easing programme (QE), primarily through asset purchases of at least USD 700 bn, of which USD 500 bn were Treasury securities, and USD 200 bn mortgage-backed securities. To inject additional liquidity into the banking sector, as of March the Fed also began to implement temporary repo transactions, as well as international repo transactions which ensure dollar

Chart I.1.4 **ECB's interest rates and EONIA**
(%)

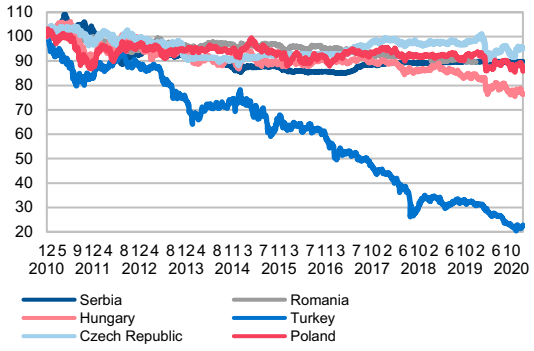


Sources: ECB and Bloomberg.

liquidity to foreign central banks and other monetary authorities (FIMA Repo Facility). To secure dollar liquidity, the Fed activated dollar swap transactions with central banks of other advanced countries (including the ECB) and several emerging market central banks. Also, it endorsed banks to use their own capital and liquidity buffers, introduced in the wake of the 2008 crisis, when approving loans to households and corporates. The Fed also launched several programmes aimed at supporting household and corporate lending, namely: 1) the Commercial Paper Funding Facility (CPFF), 2) the Primary Dealer Credit Facility (PDCF), 3) the Money Market Mutual Fund Liquidity Facility (MMLF) and many others. At end-August, it adopted changes to its monetary strategy, which imply a more flexible approach to inflation targeting and its perception of maximum employment. Instead of the long-term inflation target of 2%, the new approach implies an average 2% inflation target over a certain period in such a way that after a period of inflation constantly hovering below 2%, the Fed would allow it to moderately exceed this level for a while. A detailed review of the Fed's monetary policy strategy will be conducted by way of public debate every five years.

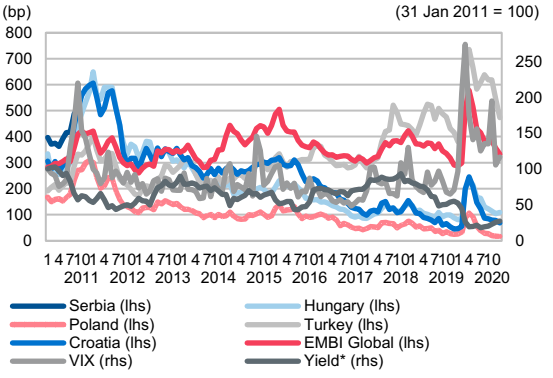
Central banks of CESEE countries pursuing an inflation targeting regime responded to the coronavirus crisis in Q1 2020 by cutting their key policy rates. Thus, the Czech Republic, Poland and Romania trimmed their rates already in March, while Hungary cut its key policy rate for the first time in June. The observed central banks continued to trim their key policy rates during the year and at end-2020 the Czech Republic had its rate at 0.25%, Poland at 0.10%, Romania at 1.50% and Hungary at 0.60%. In the first five months of the year, Turkey cut its key policy rate five times (from 11.25% to 8.25%). A

Chart I.1.5 **Exchange rates of selected national currencies against the euro***
(daily data, 31 Dec 2010 = 100)



* Growth indicates appreciation.
Sources: Central bank websites.

Chart I.1.6 **EMBI for Serbia and its regional peers, VIX and yields on US bonds**



* On derived ten-year US bonds.
Sources: J.P. Morgan and Bloomberg.

slowdown of inflation was cited as the reason for these moves. However, from September until the end of the year, the policy rate was raised by a total of 875 bp and equalled 17.0% at end-2020.

Euro area inflation in 2020 on average measured 0.3% y-o-y, which is below the 2019 average (1.2% y-o-y) and significantly below target values. The lowest inflation rates since January 2015 (-0.6% y-o-y) were recorded in the period September–December 2020 (-0.3% y-o-y) due to a fall in the prices of energy and industrial products excluding energy. Core inflation in the euro area remained low in 2020 – it edged down from 1.3% y-o-y at end-2019 to 1.0% y-o-y in March, only to post a mild rise to 1.2% y-o-y in July, and then again decelerate additionally over the following months. From September until December 2020, it equalled 0.2% y-o-y. According to the IMF's April 2021 projections, euro area inflation should pick up to 1.4% y-o-y in 2021, while inflation of 1.2% y-o-y is forecast for 2022.

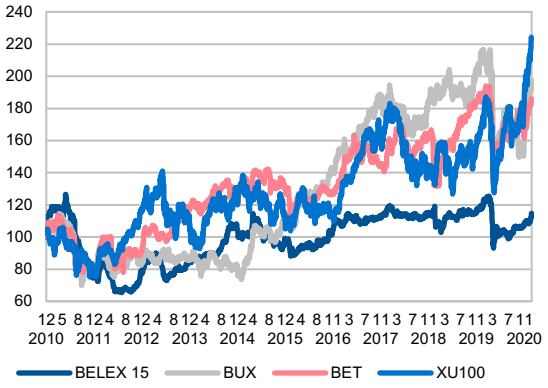
Headline y-o-y inflation in the USA at end-Q1 equalled 1.5%. During Q2 2020, it additionally slowed down and measured 0.6% in June. At end-2020 headline inflation was 1.4% (2.3% y-o-y in December 2019), and inflation excluding the prices of food and energy, as the Fed's preferred measure (1.5%), was below the target. According to the IMF's projections from April 2021, US inflation in 2021 is forecast at the level of 2.3%, and in 2022 at 2.4%.

In Q1 2020, the euro weakened against the dollar by 1.7%[10] due to the pandemic and stepped-up demand for the dollar as the most liquid and world's leading reserve currency. Considered a safe-haven currency, the dollar appreciated in periods when investors' risk aversion rose on the back of announcements of weak macroeconomic indicators of leading world economies due to the continued spread of the virus. In contrast, signs of the pandemic stabilising in the hardest hit euro area countries and measures undertaken to mitigate its consequences drove the euro to gain on the dollar; hence, in Q2 the euro strengthened 2.0% against the dollar. In Q3, it gained an additional 4.5%. This was facilitated by the positive news about vaccine development, which gave rise to market optimism and resulted in increased risk propensity. Other factors driving the value of the euro up were estimates that the euro area was handling the pandemic better than the USA. The weakening of the dollar was also facilitated by the Fed's decision on changing its monetary policy strategy, which implied a longer period of low interest rates in the USA. This led market participants to exit dollar assets and look for yields in other currencies and classes of assets. In Q4 2020 the euro gained 4.7% vis-à-vis the dollar, as a consequence of the rising optimism and greater risk propensity, which in turn dampened demand for the dollar as a safe haven currency.

During 2020, the dinar kept its value against the euro almost unchanged, while the currencies of all observed countries in the region nominally weakened against the euro. The Romanian leu depreciated by 1.9%, the Czech koruna by 3.2%, the Polish zloty by 7.7%, the Hungarian forint by 9.5% and the Turkish lira by 26.2% (Chart I.1.5).

[10] The analysis relied on the official EUR/USD exchange rate, which the NBS uses in its exchange rate lists.

Chart I.1.7 **Selected stock exchange indices**
(index points, 31 Dec. 2010 = 100)



Sources: Stock exchange websites.

Increased volatility in the international financial market, measured by the implicit measure of financial market volatility (VIX),[11] ranged during the year between 12.1% (early 2020) and 82.7% (March 2020), which is its highest level to date. At end-2020, VIX measured 22.8% (Chart I.1.6).

The economic crisis caused by the pandemic increased the uncertainty and risk premium of emerging countries. Risk premium on the dollar debt, measured by the EMBI Global, went up significantly in March, only to decrease gradually in the remainder of the year after the response by leading central banks, and at end-2020 approach the values from end-2019. At the end of 2020, EMBI for Serbia on the dollar debt equalled 128 bp (after the issuance of ten-year dollar eurobonds in November, as of 31 December 2020 EMBI for Serbia on the dollar debt is again published). At end-2020, EMBI risk premium on the euro debt for Serbia (EURO EMBIG) amounted to 143 bp and was below the EURO EMBIG Composite (158 bp). In the financial markets of countries in the region, the values of stock market indices at the end of the year were lower than at end-2019, the only exception being the Borsa Istanbul 100 Index (XU 100), which went up in the observed period (Chart I.1.7).

According to the January 2021 euro area Bank Lending Survey, corporate credit standards were tightened in Q4 2020.[12] The tightening was mostly driven by banks' increased risk perception, which reflects uncertainty as to economic recovery and concerns over the credit ability of borrowers in the context of stricter containment measures in many euro area countries. In Q1 2021 banks expect a continuous tightening of corporate credit standards. Credit standards for housing and consumer loans were tightened in Q4 2020, though at a slower pace than in the previous quarters of the year. Banks continued to cite the worsening economic prospects and deteriorating credit ability of consumers as the main factors contributing to the tightening of credit standards for consumer loans, whereas these factors were of lesser importance for housing loans. Housing loan demand continued up in Q4 2020, propped by the generally low level of interest rates and, to a lesser extent, improved outlook in the real estate market. In contrast, consumer confidence continued to exert a negative contribution to loan demand. Demand for consumer loans contracted. Banks expect a continuous tightening of credit standards and a mild fall in housing loan demand in Q1 2021.

I.1.2 Lending in CESEE countries

During 2020, supply-side credit conditions in the CESEE region were tightened and loan demand declined. Exposure of banking groups to the region oscillated during 2020, reflecting the increased level of global uncertainty and instability present over the past two years.

According to the CESEE Bank Lending Survey, published in June[13] and December[14] 2020 by the EIB, loan demand rose from September 2019 until March 2020, only to decrease from April to September 2020 due to the coronavirus. This was the first decrease in aggregate loan demand in five years. According to the survey published in June 2020, supply-side credit standards were slightly eased, while survey results from December 2020 showed a significant tightening of credit standards. Credit conditions were tightened in terms of loan amount and, to a lesser degree, maturity. Collateral requirements were significantly tightened from April to September 2020, especially in the SME segment. The number of domestic and international factors limiting the loan supply was significantly higher than in 2019 and, in some cases, these factors came close to the levels of tightened supply-side credit standards recorded in 2013. Changes in national regulations led to the loosening in supply-side credit standards, suggesting that these changes mitigated the negative effects of the coronavirus crisis. Prospects in the global market, group financing (via channels within the group) and EU regulations contributed to the

[11] Chicago Board Options Exchange (CBOE), based on the S&P 500 (SPX) index.
[12] https://www.ecb.europa.eu/stats/ecb_surveys/bank_lending_survey/html/ecb.blssurvey2020q4~e89c77d212.en.html
[13] https://www.eib.org/attachments/efs/economics_cesee_bls_2020_h1_en.pdf
[14] https://www.eib.org/attachments/efs/economics_cesee_bls_2020_h2_en.pdf

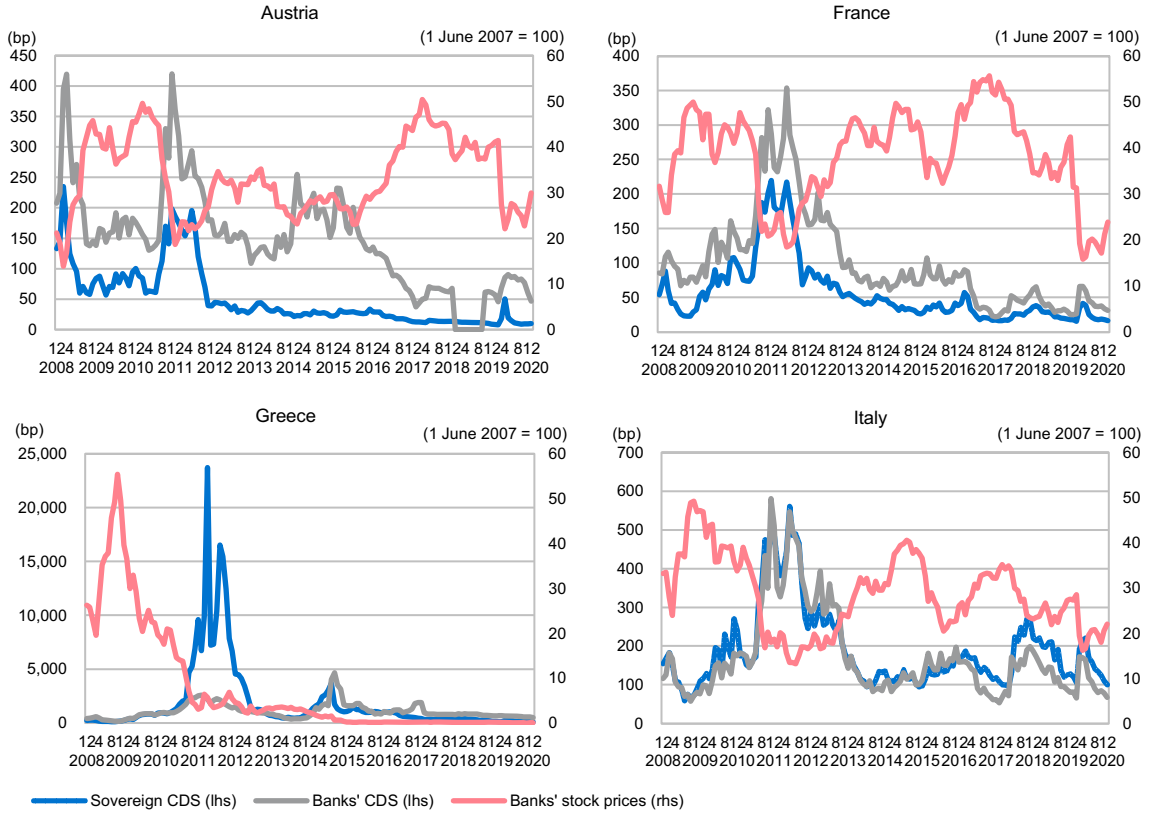
tightening of the supply-side credit standards. Expectations are that credit conditions on the supply side will be slightly tightened in the period October 2020 – March 2021, and then gradually normalised.

Based on survey results from December 2020, in the period from April to September 2020 loan demand in CESEE countries was on a decline. Investment financing had a pronounced negative contribution to total loan demand. This was an important twist, because fixed investments were one of the major contributors to growth in loan demand over the past two years. Debt restructuring started to exert a positive impact on loan demand, unlike previous three years, when its contribution was close to zero. Housing loan demand edged down slightly. Going forward, banks expect a recovery in loan demand, notably in loans for working capital and debt restructuring. Other components of loan demand are expected to give a smaller contribution.

Banking groups in CESEE countries had easier access to sources of financing in 2020 thanks to domestic sources of funding and support of international financial institutions. This shows that the response of the monetary and fiscal policies was correct in terms of ensuring liquidity for the CESEE region. Bank subsidiaries in CESEE countries believe that easier access to short-term financing has a positive impact on overall financing activities, as does financing by international financial organisations. Long-term financing conditions were only slightly eased. Given the high percentage of foreign-owned banks in the local market, developments in the euro area can affect the financing of bank subsidiaries in Serbia. Developments in the home markets of banking groups present in Serbia are shown in Chart I.1.8.

After NPLs continued on the downward path from September 2019 to March 2020, their share increased between April and September 2020 due to the coronavirus pandemic in CESEE countries. Still, growth was much lower than anticipated in the June 2020 survey. NPL ratios rose more in the household than in the corporate sector. From October 2020 until March 2021 NPLs are expected to increase. According to the results

Chart I.1.8 **Developments in the home markets of selected banking groups present in Serbia***

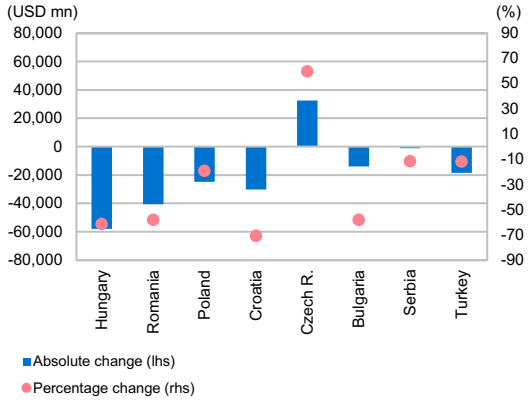


* Note: CDS spreads and stock prices are non-weighted average values for parent banks originating from each country. Monthly data represent daily data averages.
Sources: Bloomberg and Reuters.

of the December 2020 survey, the share of subsidiaries anticipating a rise in NPLs is around 36%, while 26% suggest their decline in the period April–September 2020. An increase in the NPL ratio in the period October 2020 – March 2021 is expected by 75% of banks, and almost none of them expects to see a decrease in the ratio.

The December 2020 survey showed that banking groups reported stable LtD (Loan-to-Deposit) ratios, which decreases concerns over deleveraging associated with the pandemic. This is also a signal that the response of monetary and fiscal policy makers managed to contain the negative effects of the pandemic. Around 10% of banking groups expects a decrease in the LtD ratio from October 2020 until March 2021, which is less than the average in 2017–2019, when around 15–20% of banking groups expected a fall in the LtD ratio. At the same time, almost 20% of banking groups expect the LtD ratio to go up from October 2020 until March 2021.

Chart I.1.9 **Change of cross-border exposure to selected countries, Q3 2008 – Q4 2020**



Source: BIS, locational statistics, resident principle, gross.

According to the EIB's CESEE Bank Lending Survey from December 2020, the trend of overall cross-border exposure was mildly positive from April to September 2020, because the number of banks that reported deleveraging was lower than the number of banks whose exposure increased. Even if it had not been for the pandemic, exposure would have oscillated during 2020, reflecting the increased level of global uncertainty and instability present over the past two years.

According to BIS data, in Q4 2020, relative to the beginning of the global financial crisis (Q3 2008), euro area banks reduced their cross-border exposure to countries of the region, except to the Czech Republic. Percentage-wise, exposure was reduced the most for Croatia, Hungary, Romania and Bulgaria, and the least for Serbia, Turkey and Poland (Chart I.1.9). Relative to end-2019, Q4 2020 saw lower cross-border exposure for Turkey and Croatia, and an increase for Poland, Hungary, Romania, Bulgaria, the Czech Republic and Serbia. Chapter II.1 offers a more detailed analysis of credit growth and an overview of the situation and developments in Serbia's banking sector.

The deleveraging of foreign banks in the CESEE region in the period after the global financial crisis, as well as during the coronavirus-induced crisis, did not have major consequences on Serbia's financial stability owing to a fortified domestic deposit base, as well as to the NBS's well-calibrated and timely measures.

Text box 1: ECB response to the coronavirus pandemic

The ECB adopted a series of measures to enable banks under its direct supervision to continue to fulfil their role in the financing of the economy amid the coronavirus pandemic.

One of the first measures adopted by the ECB, in March 2020[15], allowed banks to operate temporarily below the level of capital defined by the Pillar 2 Guidance – Capital Requirements Directive, the capital conservation buffer and the liquidity coverage ratio. These measures provide additional funds to banks available for supporting household and corporate lending and/or for absorbing potential losses if they had already been exposed. Banks will also be temporarily allowed to partially use capital instruments that do not qualify as Common Equity Tier 1 capital to meet the Pillar 2 Requirements. The ECB estimates that these measures would help release around EUR 120 bn worth of capital and this would enable banks to finance households and corporates that need additional liquidity in the coming period in the amount of EUR 1.8 tn. In accordance with further developments caused by the pandemic and credit cycle, the ECB will decide when the banks will be expected to fully adjust their capital requirements, which is not anticipated before the end of 2022.

In terms of liquidity, EU banks have invested considerable efforts in achieving satisfactory levels of liquidity reserves in the last couple of years, as testified by the liquidity coverage ratios which are significantly above the 100% regulatory minimum. In times of stress, it is of crucial importance for banks to use their liquidity reserves even if that means that their liquidity coverage ratio will temporarily be below the 100% limit. The ECB encourages banks to use liquidity reserves during the crisis to offset the liquidity outflows, at the same time facilitating the regulatory treatment in approval of recovery plans the banks are obliged to submit in the event of non-fulfilment of regulatory indicators. At a certain point, banks will have to abide by the general 100% floor for liquidity reserves again, and this will depend on the specificities of individual banks (e.g. access to financing market) and market factors (e.g. demand of households, corporates and other market participants for liquidity) which the ECB does not expect to happen before late 2021. Also, euro area banks directly supervised by the ECB can exclude specific exposures to central banks from leverage ratio calculation, which pertains to cash and deposits with a central bank. The said measure will be in force until June 2021 when the ECB should revise this decision.

Another support measure is the flexibility allowed in the implementation of ECB Guidance to banks on non-performing loans[16]. The ECB emphasised the support to the initiative aimed at providing sustainable solutions for debtors who are unable to settle their debt due to the pandemic. First, within their remit, the supervisors will be flexible when classifying a debtor's exposure as non-performing in cases when banks activate government or public guarantees approved to reduce the consequences of the pandemic. Second, exposures classified as non-performing under the public guarantees could qualify for favourable treatment concerning loss provisions. As accounting standards and their implementation are not under its direct supervisory competence, the ECB may take only limited measures in this regard. For this reason, the ECB prepared guidance for banks to mitigate changes in capital due to the implementation of International Financial Reporting Standard 9 (IFRS 9)[17]. As this Standard is based on the assessment of expected credit losses, which, particularly in times of heightened uncertainty, can be excessively volatile and procyclical, the ECB encouraged banks to apply transitional IFRS 9 provisions contained in Article 473 (a) of the Capital Requirements Regulation. These provisions provide for the extension of the period for introduction of expected credit losses in stages. This period can be extended to two years and banks will be able to add expected credit losses for 2020 and 2021 to Tier 1 capital. Further, in line with International Accounting Standards, banks are expected to ascribe greater significance to long-term macroeconomic forecasts in assessment of expected credit losses and provisioning according to IFRS 9.

[15] https://www.bankingsupervision.europa.eu/press/pr/date/2020/html/ssm.pr200312~43351ac3ac.en.html.

[16] https://www.bankingsupervision.europa.eu/ecb/pub/pdf/guidance_on_npl.en.pdf.
https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.npl_addendum_201803.en.pdf?81e79e706d0c3c817ea11d094a678ea8

[17] https://www.bankingsupervision.europa.eu/press/letterstobanks/shared/pdf/2020/ssm.2020_letter_IFRS_9_in_the_context_of_the_coronavirus_COVID-19_pandemic.en.pdf.

One of ECB recommendations is to postpone dividend payment, originally due for 1 January 2021 and later deferred to 30 September 2021. Distribution of dividends solely in the form of shares is in accordance with the current recommendation, on condition it does not reduce the quantity or quality of own funds. The recommendation is applied on consolidated level for systemically important groups under ECB's direct supervision and on individual level for credit institutions that are not in a systemically important group. Additionally, banks are expected to limit or postpone the payment of other variable remunerations to employees until 30 September 2021. (e.g. bonuses and rewards), particularly in case of significant individual amounts.

The ECB announced that as so far it will continue to carefully watch the effects of the pandemic and its implications for the banking sector in cooperation with banks under its direct supervision and other competent bodies. If the need arises, it will timely adopt new measures or amend the current ones taking into account the economic environment and the overall stability of the financial system.

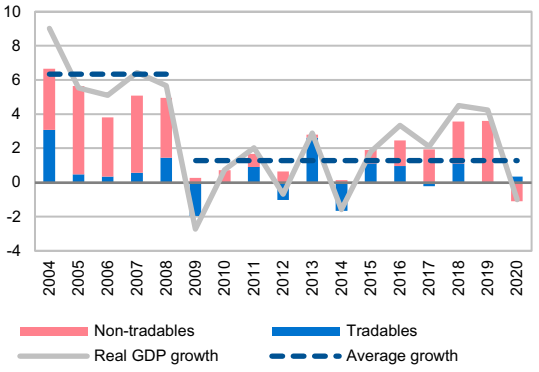
I.2 Overview of domestic macroeconomic developments

In 2020, Serbian GDP posted a 1.0% fall, this being one of the best outcomes in Europe and better than expected at the onset of the pandemic. Inflation remained low and stable in 2020, averaging 1.6%. Low inflationary pressures are also indicated by the inflation expectations of the financial and corporate sectors, which continue to move below the target midpoint for both one and two years ahead.

Amid global uncertainty due to the pandemic, economic activity contracted by 1.0% in 2020. On the production side, a negative contribution to GDP originated from services, primarily transport (-0.4 pp contribution), followed by tourism, catering, recreation and culture, i.e. activities which were hit the hardest by the pandemic, and to a lesser extent from construction too (-0.3 pp contribution), largely due to the high base from the previous year. On the other hand, growth was recorded in agriculture, adding 0.3 pp to GDP growth, but also in industry (0.1 pp contribution), which demonstrated resilience in the face of the global economic slack owing to past investments and greater diversification of production and exports.

On the expenditure side, the economic contraction was largely attributable to subdued household consumption, which dropped by 2.5% y-o-y, with a 1.7 pp negative contribution to GDP growth. On the other hand, government consumption and investment had a positive effect on economic trends, adding to GDP growth 0.9 pp and 0.5 pp, respectively. Owing to successfully implemented fiscal consolidation, initiated structural reforms and improved investment climate, in prior years

Chart I.2.2 **Real GDP growth – supply contributions**
(%)

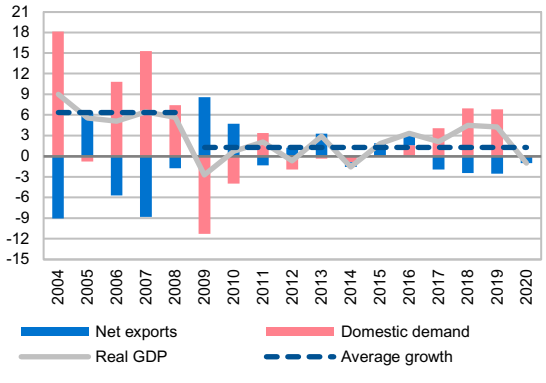


Sources: NBS and SORS.

Serbia created the basis for economic growth acceleration in the medium run. Solid macroeconomic fundamentals helped Serbia face the crisis caused by the coronavirus better than most European countries, as reflected in economic activity, which is among the best in Europe in 2020.

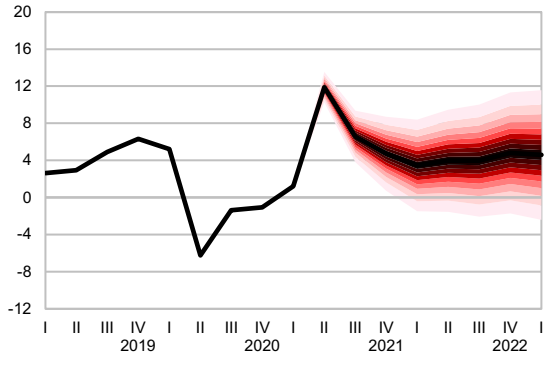
Owing to the successful vaccination process and a strong rebound in external demand, Serbian GDP reached its pre-crisis level already in Q1 2021. The key positive contribution to such growth came from net exports. As investment and consumer confidence has been preserved and infrastructure projects are unfolding, fixed investment and consumption are also on the path of recovery. An additional impulse to growth is expected from the third fiscal stimulus for businesses and households and the higher planned government capital expenditure. Further progress in the vaccination process is expected to prop up the recovery of services that are

Chart I.2.1 **Real GDP growth – demand contributions**
(%)



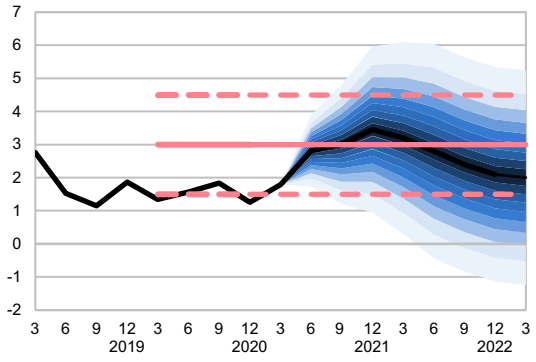
Sources: NBS and SORS.

Chart I.2.3 **Projection* of real GDP growth**
(y-o-y growth rates, %)



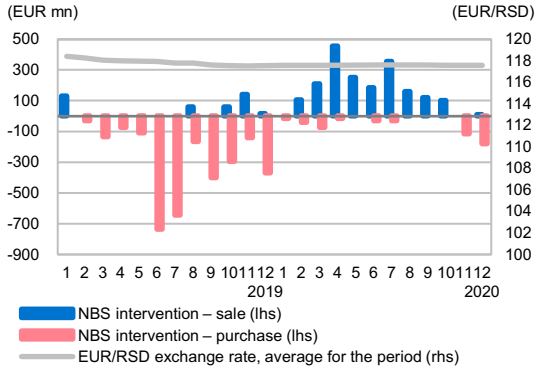
* May 2021.
Source: NBS.

Chart I.2.4 **Inflation projection***
(y-o-y growth rates, %)



* May 2021.
Source: NBS.

Chart I.2.5 **Exchange rate movements and NBS interventions in the IFEM**



Source: NBS.

still significantly affected by the pandemic (tourism, catering, transport, recreation and culture). All of this should result in a 6% GDP growth in 2021.

Inflation stayed low and stable for the seventh year in a row, and averaged 1.6% in 2020. Average core inflation in 2020 was at the same level, which suggests that demand-side pressures remain relatively low despite the continuing rise in wages and employment in the majority of sectors. Inflation is expected to move in the lower part of the target tolerance band (3%±1.5 pp) this and the next year, and its mild rise in the short term will be driven by the expected adjustment in some administered prices and the low base effect for petroleum product and food prices. Core inflation picked up slightly at year-end (2.1% y-o-y), mirroring elevated demand for work-at-home devices (computers, mobile phones) and medical products.

Under the central May 2021 projection, y-o-y inflation will hover around the target midpoint until Q1 2022, under the impact of higher prices of primary commodities, notably oil and agricultural products, which will through cost-push pressures spill over, to a degree, onto higher prices of other food (Chart I.2.4). It should slow thereafter as the impact of temporary factors wears off and stay in the lower half of the target tolerance band until the end of the projection horizon.

Labour market data on the rising employment rate and the maintained single-digit unemployment rate attest to the significance of the package of economic measures by the Government and the NBS, which helped sustain favourable trends despite the challenges imposed by the pandemic. The employment rate measured 49.1% at the level of entire 2020, up by 0.1 pp relative to 2019, while the unemployment rate measured 9.0%, down by 1.4 pp relative to 2019. Gross wages in 2020 went up by 9.5% in nominal terms, or 7.8% in real terms. At the same time, net wages rose by 9.4% in nominal terms, or by 7.7% in real terms. Work from home[18] measured 9.9% in 2020, up by 1.9 pp relative to 2019.

The NBS proceeded with cautious monetary policy in 2020, trimming its key policy rate four times. In March, the NBS made the first decision to lower the key policy rate by 50 bp, to 1.75%, and to narrow the interest rate corridor, from ±1.25 pp to ±1 pp. After that, in April, June and December, the key policy rate was cut by 0.25 pp, to 1.0%, its lowest level yet in the inflation targeting regime. This cut brought the key policy rate to a level 1.25 pp lower than before the onset of the pandemic-induced crisis, which reflected on a favourable price of dinar borrowing. Also, in December, the NBS decided to narrow the main interest rate corridor, from ±1.0 pp to ±0.9 pp relative to the key policy rate. The main factor behind the Board's decision to further cut the key policy rate in December was the scale of the pandemic-induced crisis worldwide, i.e. renewed worsening of the epidemiological situation and the consequent slowing of the incipient economic recovery globally, and especially in the euro area.

As for the FX market movements, the dinar preserved almost the same value against the euro, thus continuing its years-long trend of relatively stable movements. Due to the simultaneous weakening of the dollar vs. the euro, the

[18] Work from home is measured as the share of those working from home in total employment.

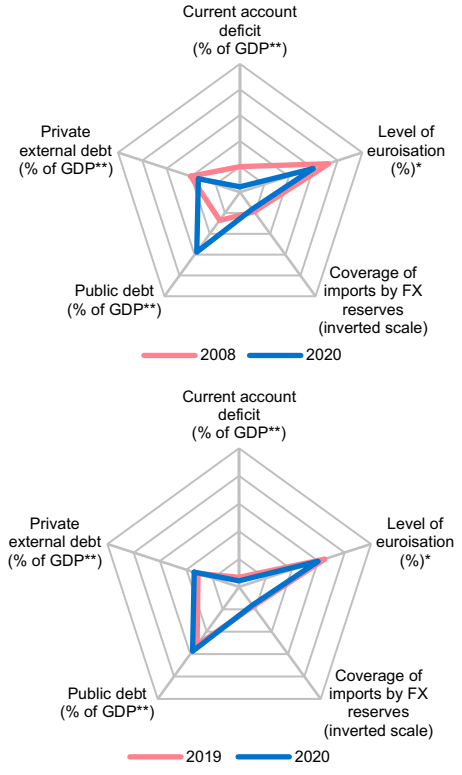
dinar gained 9.7% against the dollar. The depreciation pressures from early 2020 were triggered primarily by the seasonally heightened FX demand of domestic enterprises – energy importers, and later on the demand of residents, due to growing uncertainty in the international markets caused by the coronavirus spreading. The depreciation pressures waned gradually over the year, while November and December saw the prevalence of appreciation pressures. Contributing to these trends were residents who were selling foreign currency to banks in December rather than buying it as usual and non-residents who were the majority buyers of dinar government securities at year-end auctions, indicating that the confidence and optimism of foreign investors concerning long-term investment in Serbia were maintained even amid the pandemic.

In 2020, the NBS was a net seller of EUR 1,450.0 mn in the IFEM (in total, it sold EUR 1,950.0 mn and bought EUR 500.0 mn) (Chart I.2.5). The NBS intervened in the IFEM to ease excessive short-term volatility of the exchange rate, without any intention to influence its level or trend.

The NBS maintained gross FX reserves at an adequate level, and they stood at EUR 13.5 bn at end-2020 (up by EUR 0.1 bn from December 2019). This level of FX reserves covered 130% of money supply (M1) or more than six months' worth of the country's import of goods and services (twice the level prescribed by the standard on the adequate level of coverage of the import of goods and services by FX reserves). At year-end, gross FX reserves have been the highest since 2000 when we started monitoring this indicator.

The risk premium indicator EMBI for Serbia, which is based on dollar-denominated debt, stopped being published at end-August 2020, as there were less than 13 months to maturity of the only dollar Serbian eurobond in circulation. This indicator is published again since 31 December 2020, when J. P. Morgan included a new ten-year eurobond in dollars (issued in November 2020) in the index calculation. At end-2020, EMBI risk premium on dollar debt for Serbia amounted to 128 bp. Owing to the June 2019 issue of euro-denominated eurobonds in the international financial market, as of July the same year we also have data about EMBI on Serbian euro debt (EURO EMBIG). Measured by EURO EMBIG, Serbia's risk premium averaged 207 bp in 2020, and 143 bp at year-end, below EURO EMBI Global Composite (158 bp).

Chart I.2.6 **Key macroeconomic risks**



* Share of FX and FX-indexed deposit in total deposit of households and corporates.

** GDP is compliant with ESA 2010 methodology.

Source: NBS.

In March and September 2020, Fitch Ratings kept Serbia's long-term foreign and local-currency issuer default ratings at BB+ (a step from investment grade), with a stable outlook for further improvement, owing to sound economic indicators, which were preserved even amid the coronavirus pandemic. S&P also affirmed Serbia's rating at BB+ on three occasions in 2020 (May, June and December), with a stable outlook. According to S&P's last report for 2020, the maintained credit rating and its outlook reflect the fact that Serbia entered the pandemic-caused crisis with significantly better overall macroeconomic indicators. The key contributing factor was the fact that the NBS and the Government preserved price, financial and fiscal stability, as well as relative stability of the exchange rate in the prior period. In March 2021, Moody's improved Serbia's credit rating from Ba3 to Ba2, despite global circumstances marked by the pandemic. The credit rating upgrade reflects the resilience of the Serbian economy to the consequences of the

pandemic, stable medium-term growth prospects, as well as expectations that Serbia's fiscal metrics will continue to outperform Ba peers. Moody's immediately affirmed Serbia's stable outlook for further improvement. Moreover, in mid-March 2021, Fitch Ratings maintained Serbia's rating at BB+, a step away from investment grade, with stable outlook for its further increase and improvement to investment grade.

The key financial system vulnerability indicators in 2020 suggest lower vulnerability and strengthened resilience of the financial system[19] compared to 2019, as indicated by the decrease in the current account deficit and the increase in the dinarisation of deposits and loans. On the other hand, lower resilience of the financial system in 2020 compared to 2019 is indicated by the increase in the share of private external debt in GDP (from 31.3% to 34.1%), total external debt in GDP (from 61.5% to 66.3%) and public debt (from 52% to 57.4%). However, despite rising public debt share in GDP, it can be concluded that Serbia's public debt is sustainable and far from the level that could lead to a crisis. At the same time, compared to the majority of other EU countries, the share of public debt in GDP posted moderate growth, not exceeding the Maastricht criterion of 60% even in 2020.

The share of the current account deficit in GDP amounted to 4.3% in 2020, which is a decrease from 2019, when it stood at 6.9% of GDP. The reduction in the current account deficit can be put down to the lower deficit on trade in goods, lower FDI expenditure, as well as a higher surplus on trade in services. Stronger resilience of the Serbian economy to potential exchange rate effect is also underpinned by the higher degree of dinarisation of the domestic financial system, given that the share of FX and FX-indexed deposits in total corporate and household deposits dropped by 5.0 pp in 2020, to 59.9% at the end of the year. The share of FX and FX-indexed loans in total corporate and household loans also contracted (from 66.9% at end-2019 to 62.7% at end-2020). The resilience of the domestic financial system to shocks from the international environment has been additionally strengthened by the record-high FX reserves and their better coverage of the import of goods and services.

[19] The key financial system vulnerability indicators for the Republic of Serbia are shown in Chart I.2.6. The Chart shows changes in the current account deficit, private external debt, public debt, euroisation level and adequacy of FX reserves – as the inverse value of the number of months of the gross FX reserves/imports coverage. Any increase in the indicator's distance from the centre of the Chart signals elevated risk and a threat to stability. The further away from the centre an indicator is, the greater the vulnerability of the economy.

I.3 Foreign exchange reserves as insurance against shocks

In 2020, FX reserves were maintained at a high and stable level despite the challenges posed by the coronavirus pandemic. Gross FX reserves equalled EUR 13.5 bn at end-December 2020, having risen by EUR 113.2 mn y-o-y, while in net terms[20] they stood at EUR 11.1 bn. These levels of FX reserves strengthened additionally the resilience of the domestic financial system to shocks from the international environment. Different stress scenarios show that FX reserves are sufficiently high to safeguard the domestic financial system even in the event of extreme shocks.

As an institution in charge of safeguarding and strengthening the stability of the financial system, the NBS manages and maintains an adequate level of FX reserves, used to preserve the stability of the financial sector, settle the state's liabilities toward foreign creditors, and finance potential and significant balance of payments imbalances in times of crises.

The adequacy of the level of FX reserves is assessed by various analyses and indicators, primarily from the aspect of materialisation of an individual risk or a mix of several risks. The most common risks, based on which relevant indicators are constructed, are the risk of hindered financing of import of goods and services and external debt maturing within a year in conditions of reduced capital inflows from abroad due to the limited access to the

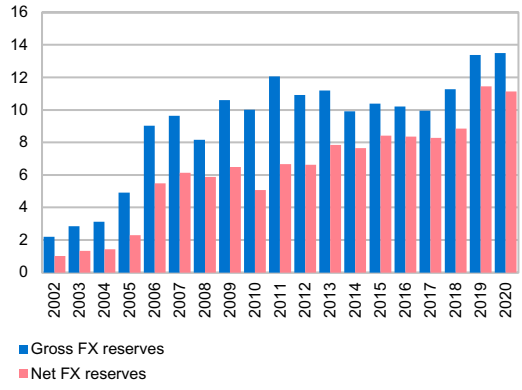
Table I.3.1 **Indicators of FX reserves adequacy, end-2020**

Indicators of adequacy	Adequate level (EUR bn)	Coverage of adequate level with gross FX reserves
Average three-month imports of goods and of services	6.6	205%
Short-term external debt at remaining maturity	5.6	243%
20% money supply M3	5.7	238%
"Right measure for Serbia"	7.3	184%
FX reserves		
Gross	13.5	
Net	11.1	

Source: NBS.

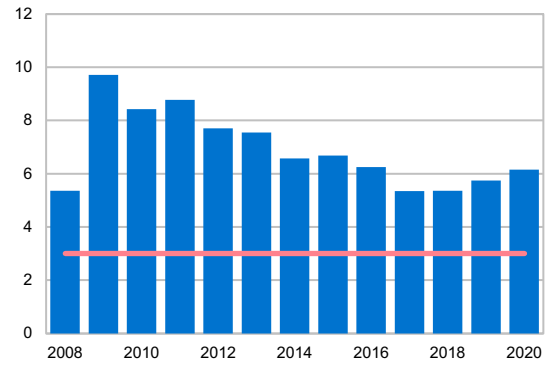
[20] Net reserves are FX reserves less banks' FX required reserves and other FX assets.

Chart I.3.1 **National Bank of Serbia FX reserves**
(EUR bn)



Source: NBS.

Chart I.3.3 **Months of imports covered by gross FX reserves**



Source: NBS.

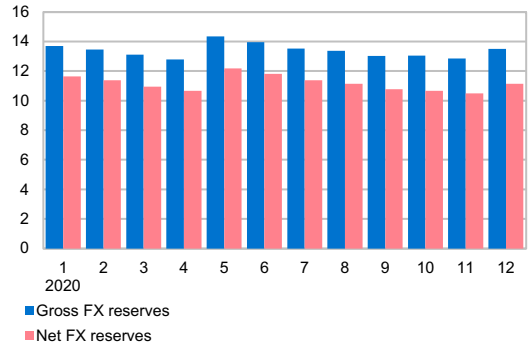
international capital market, and the risk of a withdrawal of a portion of deposits from the banking sector.

Traditional FX reserve adequacy indicators analyse the degree of protection against individual risks. The indicator of FX reserves import coverage shows the link between FX reserves and the size and openness of the economy. The level of FX reserves is considered adequate if it covers three months' worth of the imports of goods and services.

In addition to the indicator of FX reserves import coverage, protection against individual risks is also measured by an indicator known as the Greenspan–Guidotti rule,[21] which shows the capacity of a country to service its external debt in the course of one year. The adequate level is achieved when a country can cover at least 100% of its short-term external debt in case it is cut off from the international capital market for the duration of one year.

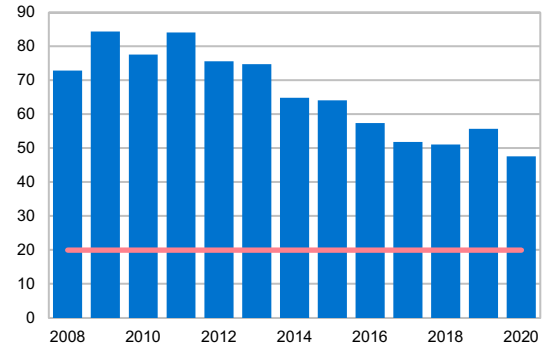
To measure the degree of protection against the risk of withdrawal of domestic currency deposits, we use an indicator that shows the connection between FX reserves and monetary aggregates. The optimal level is achieved if FX reserves cover at least 20% of broad money (M3). At end-2020, the Republic of Serbia's FX reserves stood at an adequate level for the protection against individual risks. They provided for the financing of the 6.1 months' worth of the imports of goods and services, 242.8%

Chart I.3.2 **National Bank of Serbia FX reserves in 2020**
(EUR bn)



Source: NBS.

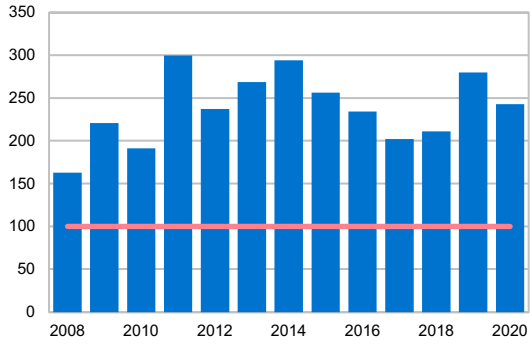
Chart I.3.4 **Money supply M3 covered by gross FX reserves**
(%)



Source: NBS.

[21] Guidotti, Pablo, Sturzenegger, Federico and Augustin Villar (2004), *On the Consequences of Sudden Stops,* Economia Vol. 4, No. 2, pp. 171–203.

Chart I.3.5 **Short-term external debt at remaining maturity covered by gross FX reserves**
(%)



Source: NBS.

Table I.3.2 **Stress scenarios for FX reserves**

Symbol	Parameter	Scenario 1	2	3	4	5
γ	Damage caused by sudden stop	7%	7%	7%	7%	7%
r	Yield on reserves	0%	0%	0%	-0.5%	-1.0%
g	Average GDP growth	6.0%	5.5%	5.0%	4.5%	4.0%
σ	Risk aversion	2	2	2	2	2
δ	Opportunity cost	1%	1%	1%	1%	1%
π	Probability of sudden stop	10%	10%	10%	10%	10%
λ	Size of shock (% of GDP)	20%	20%	20%	20%	20%
ΔQ	Real depreciation	0%	2.5%	5%	7.5%	10%
	Optimal level of reserves (EUR bln)	10.2	10.7	11.2	11.7	12.1
Gross NBS FX reserves (2020, EUR bn)				13.5		

Source: NBS.

coverage of short-term external debt at remaining maturity and 47.6% coverage of broad money (M3).

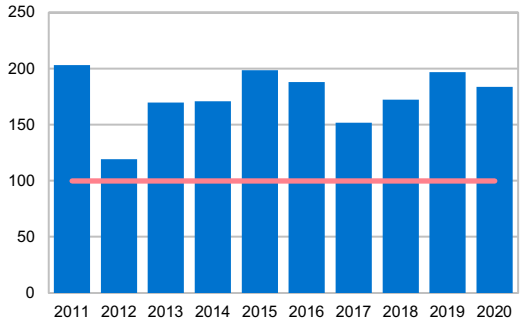
In order to make a comprehensive assessment of the adequacy of FX reserves, we developed "the right measure for Serbia" indicator that takes into account the specificities of the Serbian economy.[22] It implies the coverage of the sum of short-term debt at remaining maturity, current account deficit adjusted for FDI, 15% of FX and FX-indexed deposits and 5% of dinar corporate and household deposits.

"The right measure for Serbia" indicator was also significantly higher than the optimal 100% (183.8%), although it declined from last year (196.8%) due to the increase in short-term debt at remaining maturity and, to a lesser extent, the rise in deposits.

The Jeanne–Ranciere[23] model determines an optimal level of FX reserves as a share in GDP (ρ), depending on the size of the shock (λ), probability of a sudden stop (π), damage caused by the sudden stop to capital flows (γ), real depreciation (ΔQ), risk aversion (σ), return on reserves (r), opportunity cost of holding reserves (δ) and real GDP growth (g).

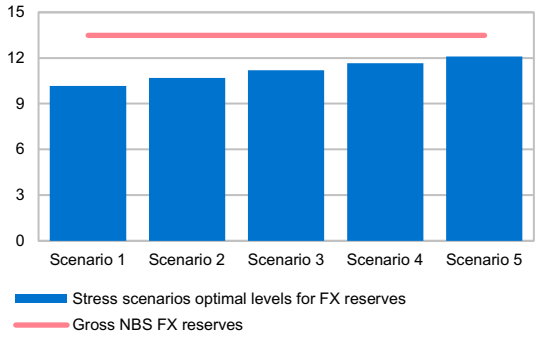
The model assumes that in a small, open economy, vulnerable to sudden stops to capital flows, economic policy makers decide on the level of FX reserves with a view to maximizing the general welfare. In the event of a sudden stop to capital flows, resulting in the impossibility to roll over external debt, it is assumed that a higher level of FX reserves will mitigate the decline in output and ensure smooth consumption. In this model, the optimal

Chart I.3.6 **"Right measure for Serbia" for gross FX reserves**
(%)



Source: NBS.

Chart I.3.7 **Optimal levels of FX reserves under stress scenarios, December 2020**
(EUR bn)

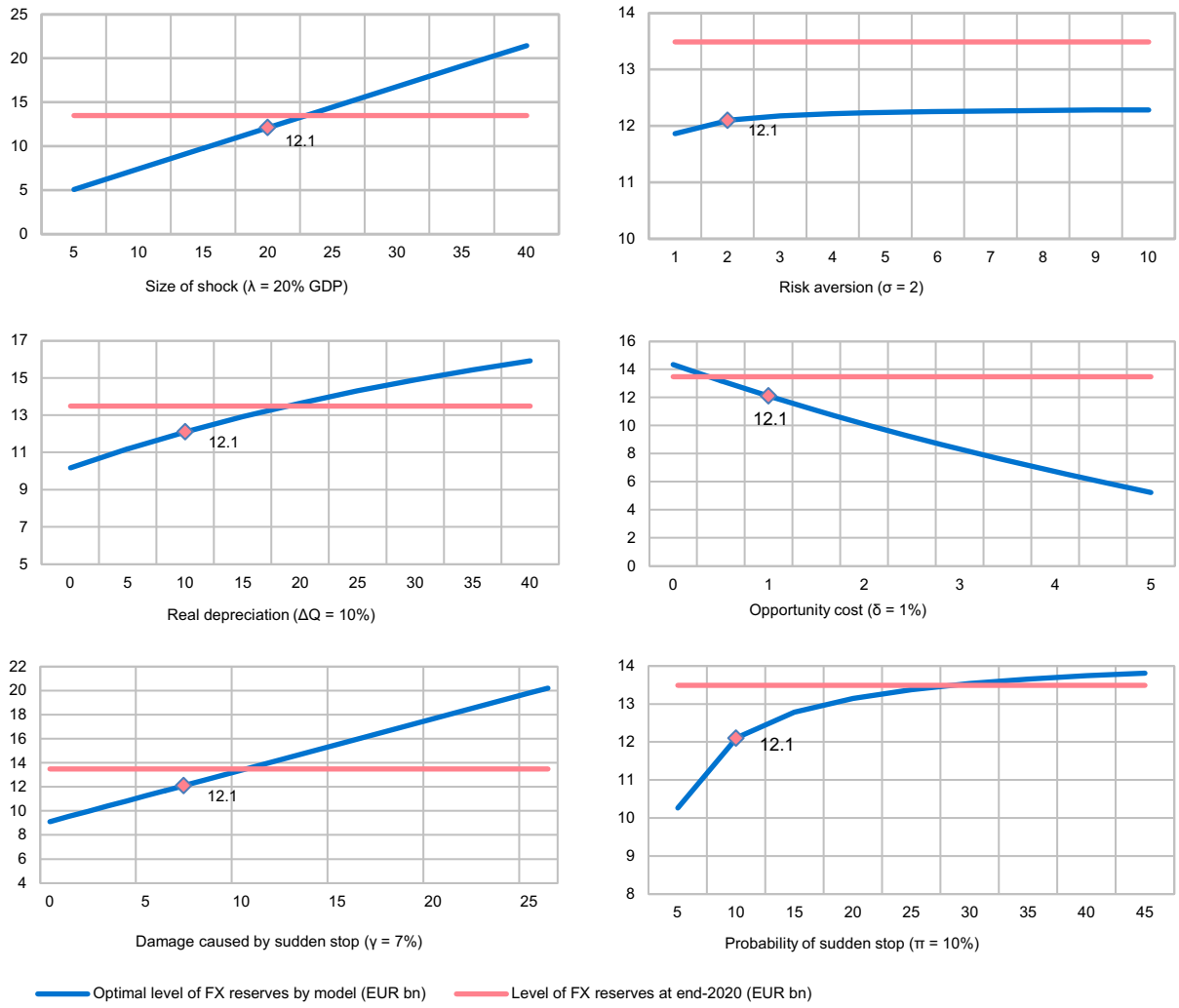


Source: NBS.

[22] For more details on this indicator, see the *Annual Financial Stability Report – 2011*.

[23] See O. Jeanne, R. Ranciere (2008): *The Optimal Level of International Reserves for Emerging Market Countries: A New Formula and Some Applications, CEPR Discussion Papers 7623*, and the *Annual Financial Stability Report – 2011*.

Chart I.3.8 **Sensitivity analysis of FX reserves adequacy model parameters, based on the fifth stress scenario**



Source: NBS.

level of reserves is determined by the size and likelihood of a sudden stop to capital inflows, the potential output and consumption losses, the opportunity cost of holding reserves, and the degree of risk aversion.

Table I.3.2 shows stress scenarios for FX reserves, according to the Jeanne Ranciere model, where the fifth scenario is extreme, i.e. least likely to occur given the current economic developments. In order to assess the adequacy of FX reserves, we have taken into consideration the dynamics between the factors that determine the adequacy of FX reserves.

All five scenarios of the used adequacy model, as well as all FX reserve adequacy indicators, confirmed that the level of FX reserves at end-2020 was more than adequate. Chart I.3.8 shows the optimal level of FX reserves in case the fifth scenario, which is the most extreme, materialises. It can be concluded based on this that the level of the Republic of Serbia's FX reserves would be adequate even in the worst-case scenario.

I.4 Fiscal policy, public and external debt

The Republic of Serbia responded timely to the challenges posed by the coronavirus crisis to the economic, notably fiscal policy. A large economic aid package aimed at mitigating the adverse impact of the pandemic led to a rise in public debt, which nevertheless stayed among the lowest in Europe. The share of central government debt in GDP increased from 52.0% at end-2019 to 57.4% at end-2020. The share of external debt in GDP also went up to 66.3% of GDP (61.5% at end-2019). Fiscal deficit amounted to 8.1% of GDP in 2020, as a result of the large economic aid package to corporates and households aimed at reducing the adverse effects of the coronavirus pandemic.

I.4.1 Fiscal policy

Throughout 2020, the coronavirus pandemic produced extremely negative health, economic and wider social consequences globally and at home. Enormous challenges were posed to the fiscal policy in terms of preserving economic activity, jobs and standard of living.

As a measure to fight the pandemic, emergency state was declared in the territory of the Republic of Serbia and it lasted from 15 March until 6 May 2020, causing disruptions in all spheres of social and economic life. At end-March 2020, the Ministry of Finance presented the Programme of Economic Measures to Mitigate the Negative Effects Caused by the COVID-19 Pandemic and Support the Serbian Economy. The Programme contains four groups of measures:

1) tax policy measures (deferral of payroll taxes and contributions for the private sector, during the emergency state, with postponed payment of incurred liabilities in instalments, starting no sooner than 2021 and deferral of advance payments of income tax in Q2, as well as VAT relief for donors);

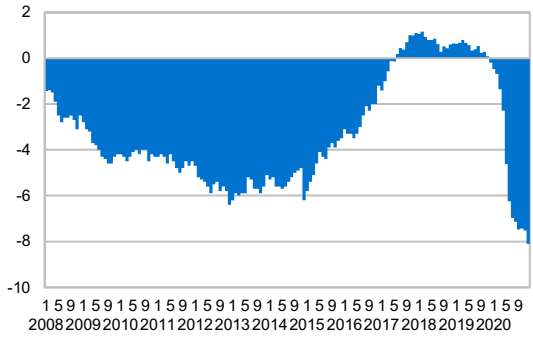
2) direct aid to the private sector (payment of assistance in the amount of three minimum wages to entrepreneurs, micro-enterprises, and SMEs in the private sector (during the emergency state); direct aid to large private companies in the amount of 50% of net minimum wage (during the emergency state) for each employee on paid temporary leave on employer's decision;

3) measures to preserve liquidity (financial support to corporates through the Serbian Development Fund and the Corporate Support Guarantee Scheme);

4) and other measures (moratorium on dividend payments until the end of 2020, except for public companies, and direct assistance to all adult citizens in the dinar equivalent of EUR 100).

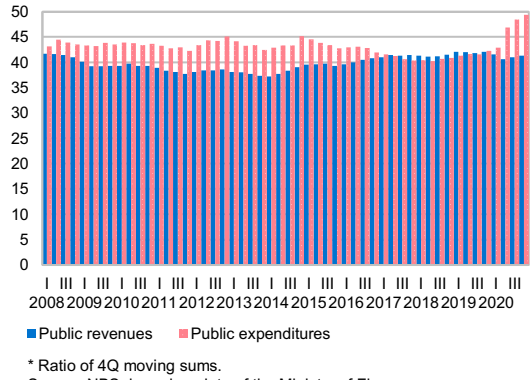
In July 2020, the Ministry of Finance adopted the second package of economic measures amounting to RSD 66 bn, which included the payment of 60% of the minimum wage in August and September and relief from payroll taxes and contributions for one month for micro enterprises and SMEs. In August 2020, a new package of measures supporting the hotel industry was adopted (worth RSD 1.247 bn). Thus, the overall value of the package of economic measures which helped contain the crisis impact and minimise the economic fall reached EUR 5.8 bn or around 12.8% of GDP[24].

Chart I.4.1 **Fiscal result***
(% of GDP)



* Ratio of 12m moving sums.
Source: NBS, based on data of the Ministry of Finance.

Chart I.4.2 **Public revenues and expenditures***
(% of GDP)



* Ratio of 4Q moving sums.
Source: NBS, based on data of the Ministry of Finance.

[24] Ministry of Finance, Republic of Serbia, Current macroeconomic developments – presentation, March 2021.

The fiscal deficit amounted to RSD 442.8 bn or 8.1% of GDP in 2020 (0.2% of GDP in 2019) (Chart I.4.1). In terms of government levels, general government budget deficit reached RSD 459.1 bn.

Primary fiscal result[25] was also negative in 2020 – at RSD 332.5 bn, or 6.1% of GDP (positive primary result of 1.8% of GDP in 2019). As interest expenses reflect the fiscal policy and deficit from the past period, the primary fiscal result shows whether the achieved fiscal revenue is sufficient to cover fiscal expenditure that does not arise from public debt servicing. Primary fiscal result is an indicator of the efficiency of the current fiscal policy and its impact on public debt.

The 2020 fiscal deficit was recorded amid increased fiscal expenditure and decreased fiscal revenue compared to the previous year. Overall general government public expenditure in 2020 exceeded the last years' by RSD 408.1 bn. The rise in expenditure was mostly driven by the payments to corporates and households aimed at overcoming the crisis and increased investments in the healthcare system. In 2020, current expenditure exceeded the last year's by RSD 351.1 bn, mostly on account of subsidies (RSD 130.3 bn). Overall general government revenue in 2020 went down by RSD 23.6 bn from the previous year. The sharpest decrease was recorded for current revenue (by RSD 19.9 bn), while domestic VAT receipts increased by RSD 21.3 bn from a year earlier. Tax receipts went down by RSD 2.9 bn in 2020, with the sharpest decrease in corporate income tax (by RSD 3.8 bn) and contributions (by RSD 2.1 bn), as a result of the first package of economic measures which envisaged the postponed payment of contributions and corporate income tax.

Capital investments grew by RSD 27 bn from 2019. The share of capital expenditure in total general government expenditure went down from 11.6% in 2019 to 10.9% in 2020, while the share of capital expenditure in GDP increased from 4.9% to 5.4% due to GDP decline. In view of the importance of improved infrastructure for long-term sustainable economic growth and the planned infrastructure investment, the increase in capital expenditure will remain a fiscal policy priority in the coming period, as confirmed by the budget revision which envisages a rise in the share of budget capital expenditure in GDP to 6.3% in 2021.

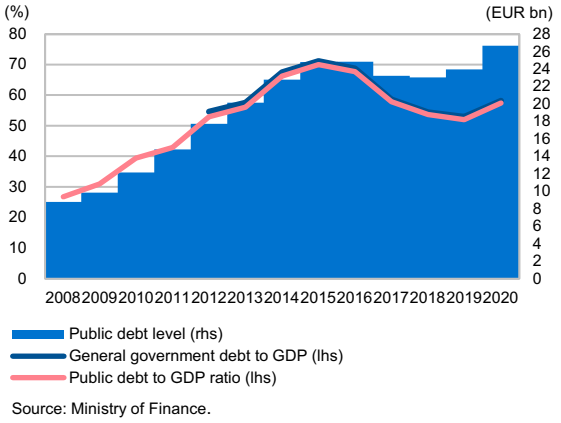
Subsidies rose by RSD 130.3 bn and their share in GDP reached as much as 4.6% in 2020 (2.2% in 2019), as a result of the measures aimed at mitigating the negative effects of the pandemic-induced crisis. The key driver of the increase in subsidies in 2020 is the direct aid to companies and entrepreneurs aimed at overcoming the coronavirus crisis. The remainder of the increase is largely owed to agricultural subsidies.

The IMF approved a programme supported by the Policy Coordination Instrument (PCI) to Serbia in July 2018 for a period of 30 months. The PCI was advisory in nature and did not involve any disbursement of funds. The progress in the implementation of the agreed economic programme was monitored through five semi-annual reviews. The first review was completed successfully in December 2018, the second and the third in 2019, and the fourth in 2020. In January 2021, the IMF Executive Board made a decision on successful completion of the fifth, last review of Serbia's economic programme. They assessed that the programme was successfully implemented throughout its duration. The IMF stated that monetary policy measures and a large fiscal package played an important role in supporting the domestic economy and fast recovery from the consequences of the coronavirus pandemic.

I.4.2 Public debt

Due to the coronavirus pandemic and the measures taken to contain its negative effects, the downward trend of the share of public debt in GDP was temporarily halted in 2020. The share of central government debt in GDP amounted to 57.4% at end-2020, up by 5.4 pp from end-2019 (Chart I.4.3). At the same time, the share of general government debt, which includes non-guaranteed debt of

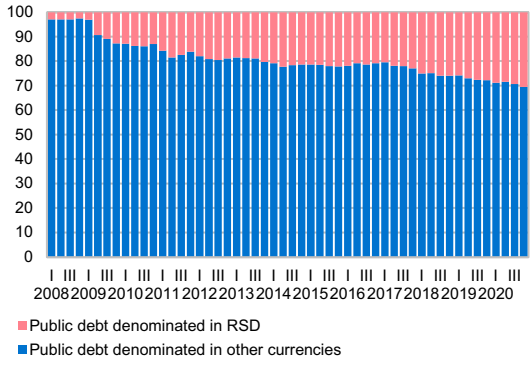
Chart I.4.3 **Public debt dynamics**



Source: Ministry of Finance.

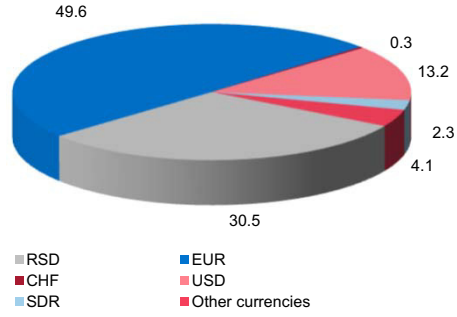
[25] Primary fiscal result is the fiscal result adjusted for the impact of paid and charged interest.

Chart I.4.4 **Public debt by currency**
(%)



Source: Ministry of Finance.

Chart I.4.5 **Public debt currency composition, 31 December 2020**
(%)



Source: Ministry of Finance.

local governments and AP Vojvodina, came at 58.2% of GDP, up by 5.3 pp compared to the year before. The one-off debt and deficit increase is an unavoidable consequence of the intervention measures aimed at reducing the impact of the coronavirus-induced crisis.

In terms of absolute amounts, at end-2020 central government debt reached EUR 26.7 bn (EUR 23.9 bn at end-2019) and general government debt EUR 27.1 bn (EUR 24.4 bn at end-2019).

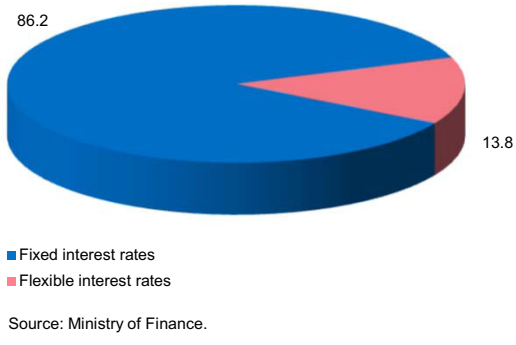
Despite the rise in the share of public debt in GDP in 2020, its currency composition improved significantly as the US dollar share was as much as 6.9 pp lower than a year earlier and the share of the dinar portion of public debt went up by 2.8 pp and the euro portion by 5.4 pp. A considerable decline in the US dollar share is attributable to the early repayment of a portion of expensive dollar eurobonds issued in 2011 at the 7.50% yield rate and 7.25% coupon rate. Also, a eurobond in euros worth EUR 2 bn was issued in May and the first hedge transaction through a swap auction was conducted whereby eurobond liabilities were exchanged from dollars to euros (eurobond issued in November, netted in December 2020 in the amount of USD 1.2 bn). Though present, the FX risk is reduced, as 69.5% of Serbia's public debt was in foreign currency at end-2020, down by 2.8 pp from end-2019 (Charts I.4.4 and I.4.5). Public debt is also exposed to the risk of EUR/USD volatility, stemming from international developments.

The share of debt repaid at a fixed rate was 86.2% at end-2020, increasing by 2.2 pp y-o-y (Chart I.4.6), which suggests a relatively low interest rate risk.

As in 2020 the government borrowed primarily by using long-term instruments, public debt maturity composition was also favourable.

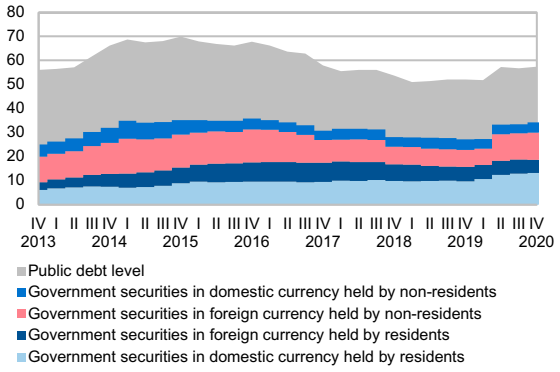
In 2020, the government borrowed to a significant degree by selling securities in the domestic market. The share of government securities in total central government public debt was 59.5% (Chart I.4.7). Interest rates on government borrowing in both dinars and euros kept falling during the year, primarily owing to the low and stable inflation, continued NBS monetary policy easing, low interest rates in the international market, prolonged maturity of securities issued in dinars and euros, as well as increased interest of non-residents in dinar securities with the longest maturities. During 2020, the Ministry of Finance Public Debt Administration organised two auctions for the early buyback of a part of three-year and a part of seven-year government dinar securities. A portion of three-year government dinar securities was purchased early at one auction in the nominal amount of RSD 5.2 bn (coupon rate: 3.75%, maturity: 17 January 2022) and a portion of seven-year government dinar securities was purchased early at the other auction in the nominal amount of RSD 5.0 bn (coupon rate: 5.75%, maturity: 21 July 2023).

Chart I.4.6 **Public debt interest rate composition, 31 December 2020**
(%)



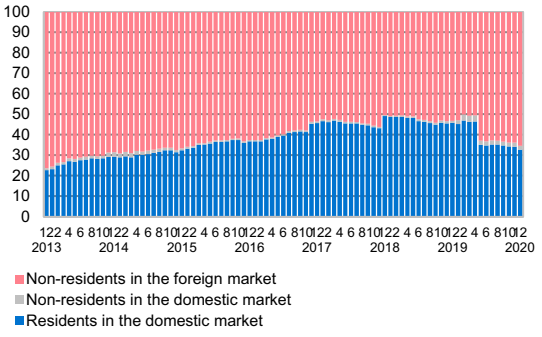
Source: Ministry of Finance.

Chart I.4.7 **Public debt in government securities**
(% of GDP)



Source: NBS, based on data of the Ministry of Finance.

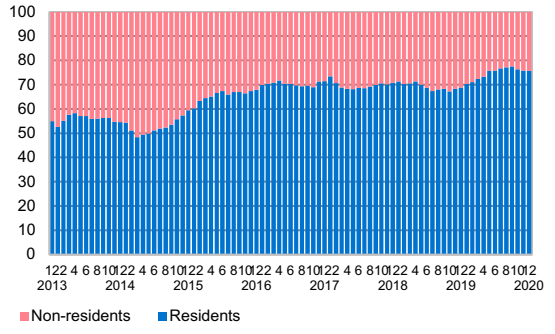
Chart I.4.9 **Ownership structure of government securities denominated in foreign currency**
(%)



Source: NBS, based on data from the Central Securities Depository and Clearing House.

The role of foreign investors in the government securities market is very important. At end-2020, they accounted for 46% of the portfolio of securities issued in the domestic and international market (42% at end-2019). The share of non-residents in dinar government securities amounted to 24.3% in 2020, down by 6.9 pp from the year before (Chart I.4.8), while their share in FX securities increased by 13.1 pp, reaching 67.4% (Chart I.4.9). This increase is a result of the issue of euro- and dollar-denominated eurobonds in the international market in 2020. In May 2020, the Republic of Serbia issued a seven-year eurobond worth EUR 2 bn in the international financial market at the 3.125% coupon rate and 3.375% yield rate. The funds raised were used for financing the programme of support to the real sector, i.e. corporates in times of the global coronavirus crisis. In November 2020, the Republic of Serbia issued a ten-year eurobond worth USD 1.2 bn in the international financial market at the 2.125% coupon rate and 2.35% yield rate. At the same time, to hedge public debt against FX risk, that is, from volatility in the exchange rate of the euro against the dollar, the Republic of Serbia performed its first ever hedging through a swap operation, exchanging eurobond liabilities from dollars to euros, thus achieving the 1.066% coupon rate for financing in euros and the nominal value of EUR 1.016 bn after the conversion. The funds raised were used for the early buyback of USD 900 mn worth of eurobonds issued in 2011 at the yield rate of 7.50% and coupon rate of 7.25%.

Chart I.4.8 **Ownership structure of government securities denominated in dinars**
(%)



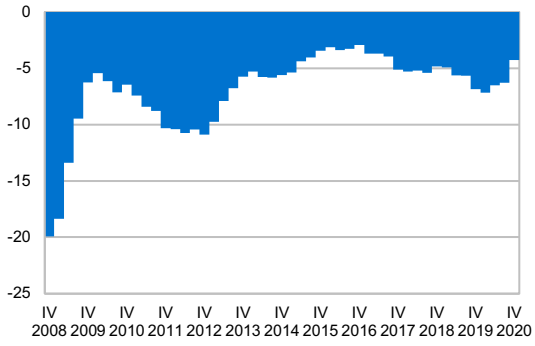
Source: NBS, based on data from the Central Securities Depository and Clearing House.

The achieved macroeconomic and fiscal stability and timeliness of monetary and fiscal policy measures were confirmed with the preserved credit rating in 2020. In March and September 2020, and then again in March 2021, Fitch Ratings kept Serbia's long-term foreign- and local-currency issuer default ratings at BB+ (a step away from investment grade), with a stable outlook going forward, owing to sound economic indicators, which were preserved even amid the coronavirus pandemic. S&P affirmed Serbia's long-term foreign- and local-currency issuer default ratings at BB+ on three occasions in 2020 (May, June and December), while changing the outlook from positive to stable in May. Further, in March 2021, Moody's upgraded Serbia's credit rating to Ba2, with a stable outlook. The rating agency cited low and stable inflation, relative exchange rate stability, lower external imbalance and full coverage of the current account deficit by FDI inflows as the main reasons for Serbia's rating upgrade. The agency also emphasised the adequate level of FX reserves, increased economic diversification and reduced fiscal risks. Along with the higher credit rating, Moody's established a stable outlook for its further increase.

I.4.3 External debt

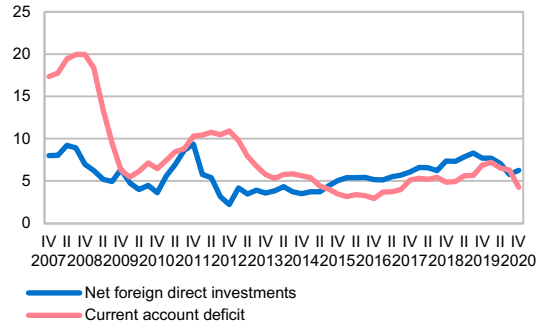
The current account deficit amounted to EUR 2.0 bn or 4.3% of GDP in 2020, down by EUR 1.2 bn from 2019. The key factors of its reduction were lower expenditures

Chart I.4.10 **Current account***
(% of GDP)



* Moving sums for the last four quarters.
Source: NBS.

Chart I.4.12 **Current account deficit financing via FDIs***
(% of GDP)



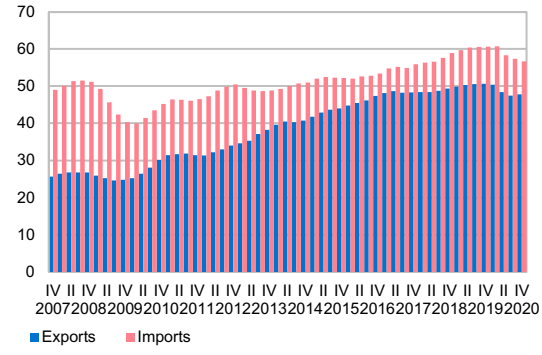
* Moving sums for the last four quarters.
Source: NBS.

on account of FDI income, as well as the lower deficit on trade in goods. The deficit on trade in goods narrowed due to dampened domestic demand and lower oil prices and the consequently lower goods import, as well as due to the resilience of Serbia's exports to external demand shocks underpinned by supply-side factors – investments in export-oriented sectors and the resulting increase in product and geographical diversification of exports, and by the excellent agricultural season (Chart I.4.10).

Serbia's key trade partners in 2020 were EU countries, accounting for 64.9% of total exports and 58.8% of total imports.[26] The export of goods and services in 2020 was 4.9% lower than in 2019 when export growth equalled 10.3%. In terms of divisions of the Standard International Trade Classification, electrical machinery, apparatus and appliances accounted for the largest share in 2020 exports (12.4%). Cereals and cereal-based products, fruits and vegetables, power generating machinery and equipment, and rubber products also accounted for a significant share in exports – along with electrical machinery, they made up 31.7% of total exports. The import of goods and services was reduced by 5.8% at the level of the year (in 2019 it increased by 10.7%). Electrical machinery and apparatus, medical and pharmaceutical products, road vehicles, industrial machines for general usage, and oil and petroleum products accounted for 25.6% of total imports in the observed year (Chart I.4.11).

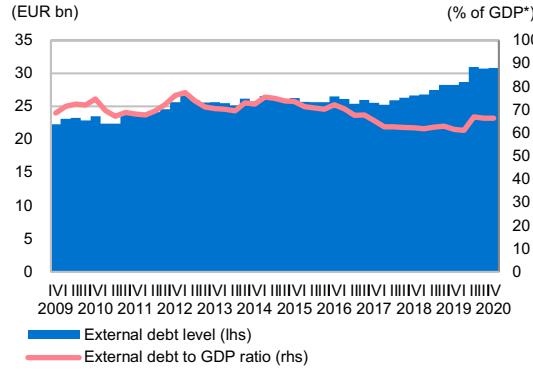
For the sixth year in a row, the current account deficit was fully covered by FDI inflows (146.5% coverage at end-2020) (Chart I.4.12). Net FDI inflow measured EUR 2.9 bn in 2020, down by 18.3% from last year due to the impact of the pandemic (primarily when it comes to lower

Chart I.4.11 **Exports and imports***
(% of GDP)



* Moving sums for the last four quarters.
Source: NBS.

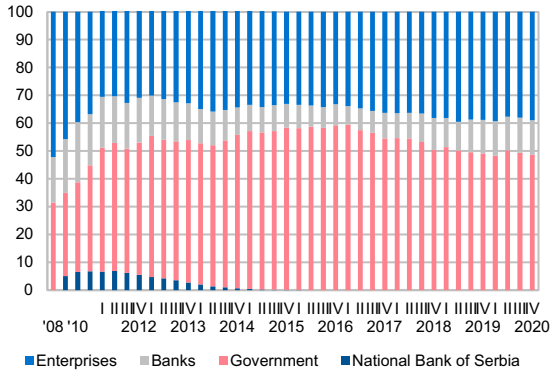
Chart I.4.13 **External debt dynamics**



* Moving sums for the last four quarters.
Source: NBS.

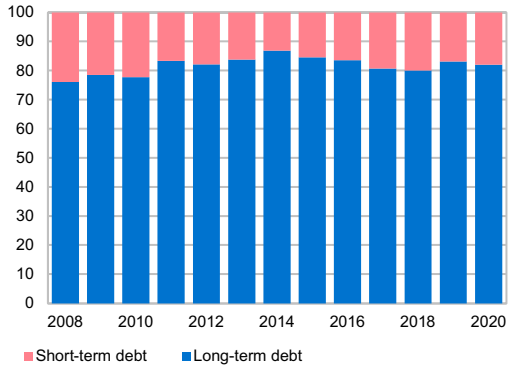
[26] Public Finance Bulletin, December 2020.

Chart I.4.14 **External debt by borrower**
(%)



Source: NBS.

Chart I.4.16 **External debt by remaining maturity**
(%)



Source: NBS.

reinvested earnings), though its relatively high share in GDP was preserved (6.2% in 2020). Sector-wise, slightly more than a quarter of investments were channelled into manufacturing (26%), followed by the financial sector (18%), transport and warehousing, as well as construction. The bulk of FDI came from European (71%) and Asian countries (20%).

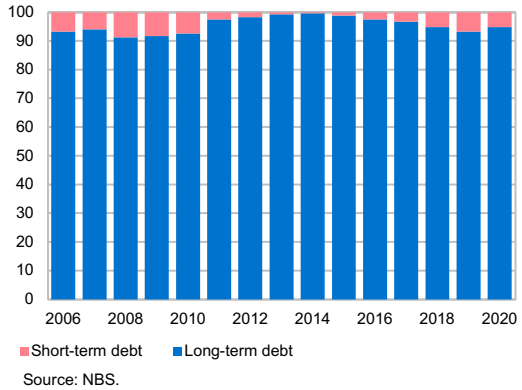
The NBS expects that the contribution of net exports will turn positive in the coming years on account of the rise in export capacities and further recovery of external demand. Consistent with such an estimate of net exports and the recovery of domestic demand and given somewhat less favourable terms of trade due to the anticipated oil price rise, we expect the share of the current account deficit to measure around 4.6% of GDP in 2021. In the medium run, it is expected to decline moderately (to around 4%) as export capacities go up and the global economic recovery takes hold, staying however fully covered by the net FDI inflow as in the past six years.

External debt equalled EUR 30.8 bn or 66.3% of GDP at end-2020. Compared to end-2019, total external debt rose by around EUR 2.6 bn, while its share in GDP increased by 4.8 pp (Chart I.4.13).

External debt growth reflects both private and public sector borrowings. Private sector external debt rose by EUR 1.5 bn at end-2020, of which banks accounted for EUR 0.4 bn and public sector for EUR 1.1 bn (Chart I.4.14).

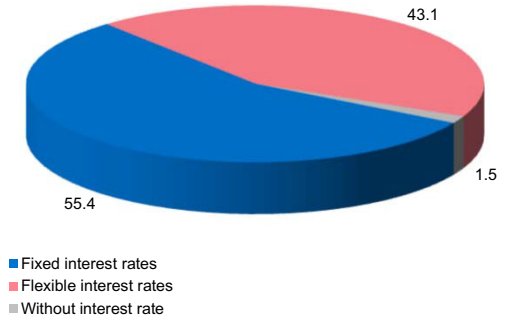
The risk of external debt refinancing is relatively low given the favourable maturity structure of external debt. At end-2020, the share of external debt at original and remaining maturity over one year was high, standing at 94.8% (Chart I.4.15) and 82.0% (Chart I.4.16), respectively.

Chart I.4.15 **External debt by original maturity**
(%)



Source: NBS.

Chart I.4.17 **External debt interest rate composition 31 December 2020**
(%)



Source: NBS.

The share of external debt repaid at a fixed rate was relatively favourable at 55.4% (Chart I.4.17), up by 1.1 pp from last year. The effective interest rate was relatively low and stable over an extended period, primarily due to the significant share of loans of international financial institutions in total external debt. The share of external debt repaid at a variable interest rate (43.1%) is concentrated largely in the banking sector (84.5%) and does not pose a risk in case interest rates of leading central banks change.

I.5 Corporate sector

Owing to the economic support measures, in 2020 corporates' profitable operations trend from the previous period was sustained, despite many challenges imposed by the coronavirus crisis. In the face of the potential risks stemming from the emergency health situation, corporate loans continued to provide a significant contribution to the y-o-y growth in overall lending. The share of corporate NPLs went additionally down in 2020.

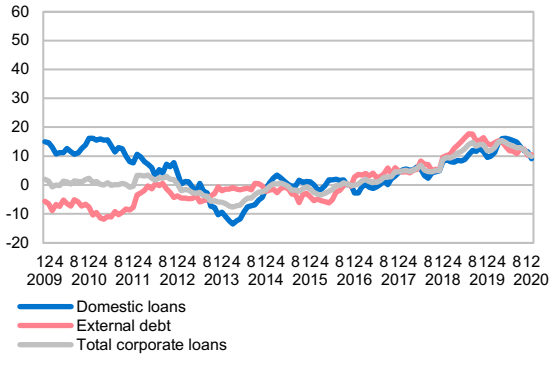
In 2020, corporate lending growth continued on the back of monetary policy easing, Guarantee Scheme loans, low interest rates in the euro area money market and other support measures of the NBS.

Domestic corporate loans,[27] excluding the exchange rate effect, rose by 9.1% in 2020 (Chart I.5.1).[28] Banks wrote off RSD 6.5 bn and sold to non-bank entities RSD 2.1 bn worth of NPLs of the corporate sector.

The highest absolute growth in receivables was recorded in transport and storage, accommodation and food services, as well as information and communications. Other sectors also recorded a rise, particularly: (a) real estate, scientific and service activities, art, entertainment and recreation, (b) trade, and (c) construction (Chart I.5.2). By loan purpose, the highest nominal growth of as much as RSD 107.1 bn was recorded for liquidity and working capital loans. At end-2020, liquidity and working capital loans to corporates provided the dominant contribution to the y-o-y nominal growth in corporate lending, supported by the Guarantee Scheme loans granted to micro enterprises, small and medium-sized legal entities and entrepreneurs as a part of the measures for liquidity preservation under the Programme of Economic Support Measures adopted by the Serbian Government. Amid growing corporate liquidity needs and the approval of loans under the Guarantee Scheme, liquidity and working capital loans made the largest share of corporate loans – 43.7% at end-2020. They were followed by investment loans, which continued to grow owing to the relaxed borrowing terms in the domestic market and accounted for 43.0% of total corporate loans at end-2020.

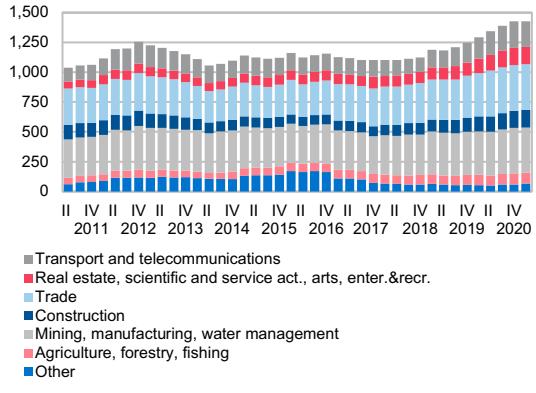
Corporate external debt reached EUR 12.0 bn at end-2020, up by 9.4% from 2019. This rise, along with the increase in domestic corporate loans, resulted in the growth in total corporate debt compared to a year earlier. The y-o-y

Chart I.5.1. **Corporate credit activity***
(y-o-y growth rates, %)



* Excluding the exchange rate effect.
Source: NBS.

Chart I.5.2 **Bank claims on corporates, by sector**
(RSD bn)



Source NBS.

[27] The corporate sector includes public non-financial sector, companies and the non-financial sector in bankruptcy.

[28] Calculated at the dinar exchange rate against the euro, Swiss franc and US dollar as at 30 September 2014 (the so-called programme exchange rate used for monitoring the performance under the arrangement with the IMF), taking into account the currency structure of loan receivables.

growth in total corporate loans (external debt included) was 9.8% at end-2020, excluding the exchange rate effect. In calculating the overall corporate lending activity, the amount of external debt was adjusted for inter-company loans (Chart I.5.1).

The share of dinar receivables in total corporate receivables of 21.0% in December 2020 was higher by 7.1 pp than at end-2019 (Chart I.5.3). Compared to 2019, the share of euro receivables dropped by 6.9 pp, and the share of dollar and Swiss franc receivables by 0.1 pp each. To reduce exposure of the corporate sector to the currency risk, the NBS is actively promoting the use of FX risk hedging instruments with an intention to reduce the risk of exchange rate volatility and thus contribute to the strengthening of financial stability. FX risk hedging instruments on offer are forward agreements (FX forwards), covered FX forward purchase (covered forwards) and currency swaps.

In terms of maturity, long-term receivables were dominant at end-2020, with the 85.1% share, which suggests a low refinancing risk. This share went up by 1.7 pp from 2019.

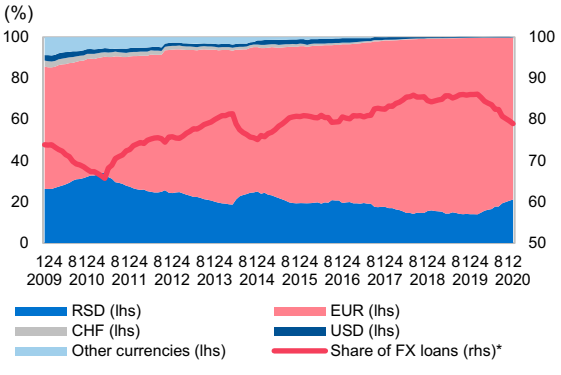
Owing to the implemented economic support measures, in 2020 corporate sector employment and profitability increased and favourable tendencies from the previous five years continued despite the difficult business conditions due to the pandemic. In 2020, companies[29] posted a positive net financial result, higher than in 2019 (RSD 431 bn compared to RSD 356 bn). Public enterprises were also more successful than in 2019, recording a positive net result, along with the continued drop in employment. Overall, in 2020, public enterprises posted a positive net financial result of RSD 30 bn, while they operated at a loss of RSD 3.6 bn in 2019.

Companies' return on equity was 6.9% in 2020 compared to 5.8% in 2019 (Chart I.5.4). The trade sector recorded the highest profitability in 2020 with 15.5% ROE, followed by the construction sector (8.8% ROE) (Chart I.5.4). Though preserving positive business results, the following sectors operated worse than a year earlier: real estate, scientific and service activities (7.1% in 2020 vs. 10.4% in 2019), transport, accommodation and food, as well as telecommunications (2.7% in 2020 vs. 5.9% in 2019). Agriculture had a negative rate of return in 2019 (-1.0%), while in 2020 it stood at 1.9%.

In terms of the enterprise size, large, medium-sized and small legal entities operated at a profit in 2020 (Chart I.5.5). In 2020, the profitability of large, medium-sized and small legal entities improved from the year before from 4.2% to 4.3%, from 10.4% to 10.9%, and from 8.1% to 10.2%, respectively. SMEs recorded the highest return rate. The pandemic affected micro legal entities the most and they recorded a negative net result of RSD 13.31 bn in 2020, which is still somewhat better than in 2019 (RSD 15.92 bn).

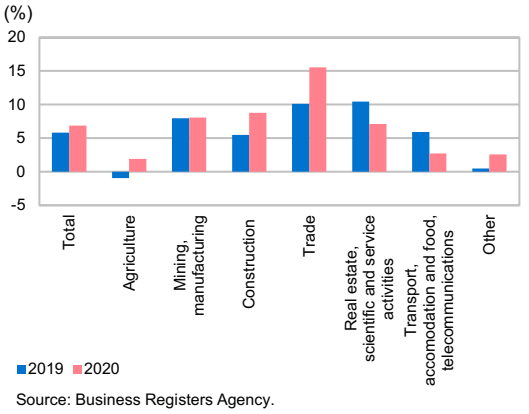
The NPL Resolution Strategy of the Serbian Government and NBS continued to produce results in 2020. The NPL Resolution Programme for the Period 2018–2020 adopted by the Serbian Government to prevent new NPLs, was

Chart I.5.3 **Currency structure of domestic corporate loans**



* Share of FX and FX-indexed loans in total debt.
Source: NBS.

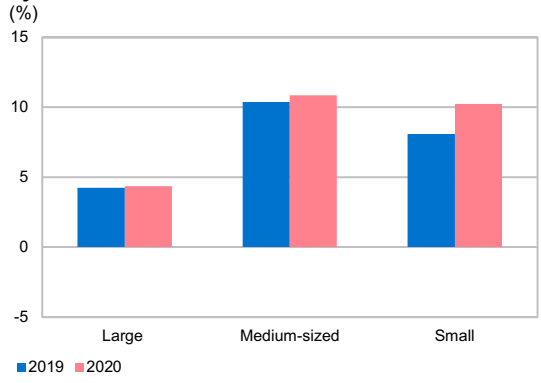
Chart I.5.4 **Corporates' return on equity (post-tax) by selected sector**



Source: Business Registers Agency.

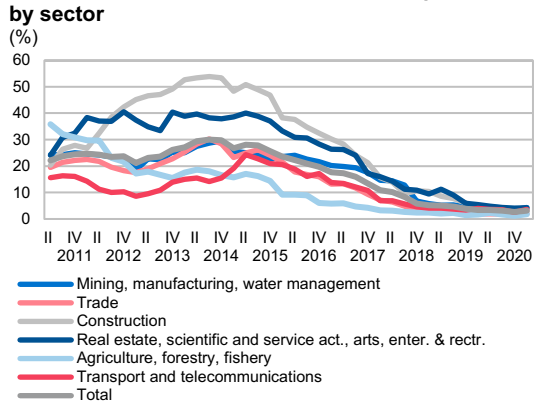
[29] According to the Business Registers Agency and Classification of Activities, with the exception of the following sectors: financial and insurance activities, public administration and defence; activities of households and extraterritorial organisations and bodies.

Chart I.5.5 **Corporates' return on equity (post-tax) by size**



Source: Business Registers Agency.

Chart I.5.6 **NPL share in total loans of corporates by sector**



Source: NBS.

implemented largely as planned considering the current specific circumstances caused by the coronavirus. In addition, to maintain corporate financing conditions in the new situation, the NBS prescribed measures and incentives to enable the preservation of bank asset quality and decelerate the build-up of new NPLs.

The y-o-y reduction in the corporate NPL ratio in 2020 is a confirmation of the effectiveness of implemented measures.

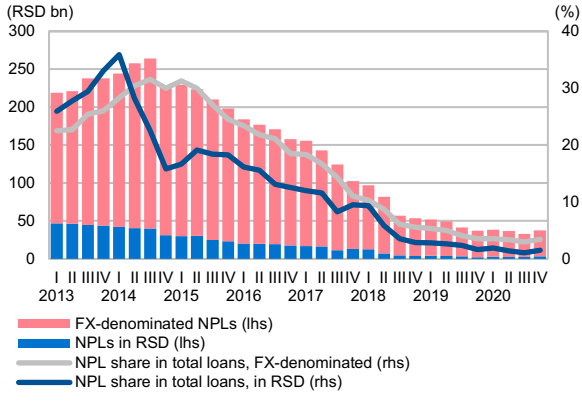
The share of NPLs in total corporate loans (loans to public non-financial sector and companies) edged down by 0.1 pp in 2020, to 3.1% in December 2020. The share of NPLs in total corporate loans declined by 0.2 pp, to 3.1% at end-December 2020. At the same time, public non-financial sector recorded an increase in the NPL ratio of 1.4 pp, to 3.0%.

Overall, in the public non-financial sector and companies, the following were hit the most by the pandemic: transport and storage, accommodation and food services, information and communications, and they recorded the sharpest increase in NPLs – by RSD 3.3 bn (of which RSD 3.0 bn pertaining to the public non-financial sector). In 2020, the NPL ratio of this sector increased by 1.4 pp, to 3.9% in December (by 3.1 pp, to 4.3% in the public non-financial sector). Positive developments in the real estate market and NBS measures supporting the construction industry (banks are encouraged to approve housing loans without waiting for the completion of the entire or most of the building, thus enabling easier access to housing loans and supporting the construction industry in turn, by means of a faster turnover of assets) were one of the reasons why the sharpest decrease in the NPL level was recorded in this sector (by RSD 1.0 bn). The NPL share in total gross loans of the construction sector declined by 1.2 pp, to 2.6% in 2020.

In the period since August 2015, when the NPL Resolution Strategy was adopted, the sharpest decrease in the corporate NPL ratio (Chart I.5.6) was recorded in the sectors of construction (by 45.2 pp) and real estate, scientific and service activities, art, entertainment and recreation (by 33.2 pp). In 2020, the decline in the NPL share of the same sectors amounted to 1.1 pp and 1.2 pp, respectively.

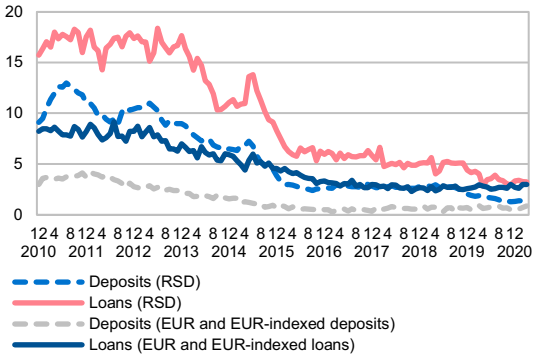
In terms of the currency structure (Chart I.5.7), corporate NPL ratio was still higher for FX than for dinar loans

Chart I.5.7 **Corporate NPLs by currency**



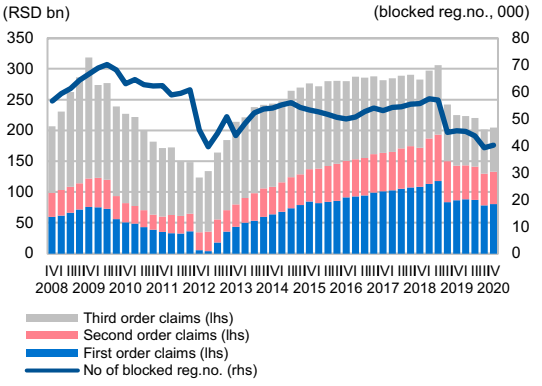
Source: NBS.

Chart I.5.8 **Interest rates on corporate loans and deposits – new business**
(weighted average, annual, %)



Source: NBS.

Chart I.5.9 **Movement of claims through enforced collection by priority**



Source: NBS.

(3.5% vs. 1.5%). In 2020, both shares dropped by 0.1 pp each.

In 2020 the costs of corporate sector borrowing went down in the segment of dinar loans (Chart I.5.8). In December, the weighted average rate on new dinar loans stood at 3.22%, down by 0.79 pp y-o-y. The weighted average rates on new euro loans were almost unchanged (2.99% in December 2020 compared to 2.95% in December 2019).

At end-2020, there were 40,241 corporates with blocked accounts (Chart I.5.9), down by 11.8% from end-2019. The amount by which the accounts were blocked declined by 8.91% from 2019, to RSD 204.6 bn in 2020.

The NBS Enforced Collection received from commercial courts 366 decisions to open bankruptcy proceedings against debtors (down by 130 from 2019), and 337 decisions to close bankruptcy proceedings (down by 20 from 2019). It also received 14 decisions to suspend bankruptcy proceedings (31 in 2019), 47 decisions to suspend bankruptcy proceedings due to the sale of the bankruptcy debtor (51 in 2019), 33 decisions to open preliminary bankruptcy proceedings with security measures (79 in 2019), and 18 decisions to adopt pre-pack reorganisation plans (34 in 2019).

In 2020, the Serbian Government and NBS acted timely to contain the potential negative impact of the coronavirus pandemic (COVID-19) on the corporate sector.

In March 2020, the Government of Serbia presented the Programme of Economic Measures to Mitigate the Negative Effects Caused by the COVID-19 Pandemic and Support the Serbian Economy, formulated based on the best international practice, recommendations of the IMF and European Commission, as well as the measures proposed by domestic business associations. The Programme entails tax incentives, direct assistance to the private sector for employee wages, liquidity preservation measures in the private sector and other incentives aimed at supporting corporates to overcome the challenges caused by the pandemic more easily.

The Programme comprises four types of measures: fiscal incentives, direct assistance to the private sector, liquidity preservation and other measures.

Fiscal incentives pertained largely to the deferral of payment of wage taxes and contributions for March, April and May 2020 until the beginning of 2021 and deferral of advance payment of corporate profit tax until final tax returns are submitted for 2020 with the possibility of paying these liabilities in not more than 24 equal monthly instalments without interest. This measure was aimed at boosting the liquidity of all corporates in the private sector. The special VAT treatment measure – non-taxable turnover for health purposes meant that the donors who donated the products they produce or trade in to public institutions involved directly in the containment of the coronavirus spread and treatment of infected citizens, were exempt from calculating and paying the VAT.

The second group of measures are direct transfers to corporates in the private sector in the amount of three minimum wages for entrepreneurs, micro, small and medium-sized legal entities per employee, and/or 50% of the minimum wage to large legal entities per employee on forced leave due to the reduced scope of work or complete

suspension of work. These measures stimulated employers to keep the existing employment levels and strengthened their liquidity to maintain business.

The objective of the third group of measures was to preserve the liquidity of corporates amid economic crisis expected during and in the aftermath of the emergency caused by the coronavirus pandemic. With this Programme, the Government of Serbia intended to minimise the external impact (decline in demand, supply chain disruptions, etc.) and its consequences (reduced employment, illiquidity, etc.) for corporates in the Republic of Serbia. Specifically, the Programme includes financial assistance through the Serbian Development Fund[30] and Guarantee Scheme to support corporates in the face of the pandemic-induced crisis[31], implemented in the form of loans of commercial banks, with a state guarantee.

In addition, corporates in the private sector which used fiscal incentives, direct transfers from the budget and financial support programme, had a ban on dividend payment until the end of 2020, with a view to preserving their liquidity.

The Serbian Government adopted an additional package of economic support measures in July and August. This package entails assistance in the amount of 60% of the minimum wage to entrepreneurs, micro, small and medium-sized legal entities in August and September; deferral of payment of taxes and contributions by one month and direct assistance to hotel industry on account of difficulties caused by the pandemic.

Moreover, to respond to the crisis, the NBS adopted a series of temporary measures under its mandate to mitigate the negative impact of the crisis on the corporate sector.

In March 2020, the NBS introduced the first moratorium on loans and financial leases for all debtors for at least 90 days, and the second one in July covering liabilities due in August and September 2020, as well as unsettled liabilities that were due in July.

To provide even more favourable borrowing conditions under the Guarantee Scheme, in July 2020 the NBS adopted an additional measure to pay a 0.50 pp higher remuneration rate than the regular one (rate on allocated required reserves in dinars) to banks approving dinar loans to clients under the Guarantee Scheme at interest rates at least 0.5 pp lower than the prescribed maximum interest rate[32].

The possibility of debt rescheduling or refinancing, with a six-month grace period and extension of repayment term, introduced by the NBS in December 2020, enabled new facilities in the payment of liabilities for corporates with reduced income or suspended business due to the pandemic.

As in the past years, in 2020 the Serbian Government adopted a number of decrees that promote entrepreneurship by providing financial support for start-ups and through development projects. To further support the growth and development of entrepreneurship, micro enterprises and SMEs via education and information dissemination, in 2020, the programme of standardised package of services for micro enterprises, SMEs and entrepreneurs continued and was implemented through the accredited regional development agencies.

The Law Amending the Law on Corporate Profit Tax (RS Official Gazette, No 153/2020) was adopted in December 2020. The amendments, inter alia, expanded the scope of capital gain that is taxable on investment units and digital assets and stipulated such taxation method. Also, the income made by a non-resident legal entity from membership in an alternative investment fund without the capacity of a legal entity was also classified as withholding profit tax. The objective of these amendments was to prescribe tax treatment in relation to new regulations governing alternative investment funds and digital assets in the Republic of Serbia.

In addition, the Ministry of Finance adopted the Rulebook amending the Rulebook on the Contents of Tax Balance and Other Issues Relevant for Setting the Corporate Profit Tax and the Rulebook amending the Rulebook on the Contents of Tax Return for the Calculation of Corporate Profit Tax (RS Official Gazette, No 159/2020.) The most significant amendments relate to the new form for the calculation of tax credit for banks for 2020 incurred from the conversion of CHF-indexed housing loans and tax credit for income made in another country (including such income from services) that was taxed in that country.

[30] Decree on Establishing a Programme of Financial Support for Corporates Aiming to Preserve Liquidity and Working Capital amid Economic Difficulties Induced by the COVID-19 Pandemic Caused by the SARS-COV-2 Virus (RS Official Gazette, Nos 54/2020 and 57/2020).

[31] Decree on Establishing a Guarantee Scheme as an Economic Support Measure to Mitigate the Consequences of the COVID-19 Disease Caused by Virus SARS-COV-2 (RS Official Gazette, No 57/2020).

[32] One-month BELIBOR+2.5 pp.

I.6 Household sector

The crisis caused by the coronavirus pandemic required restrictive measures to preserve human health and lives. Thanks to timely economic policy measures, the labour market did not feel significant consequences. Even in such aggravating circumstances, dinar savings continued to rise, reflecting further growth in households' confidence in the local currency and the banking sector, which is very significant, especially in times of crisis. To mitigate the negative effects of the coronavirus pandemic, the NBS adopted a set of measures to facilitate the settlement of liabilities and access to new sources of financing for households.

The labour market felt the consequences of the coronavirus pandemic throughout 2020. Owing to introduced containment measures, the share of people working from home amounted to 9.9% in 2020, up by 1.9 pp compared to 2019, while absence from work equalled 7.4% or 1.4 pp more than in 2019. According to the Labour Force Survey, the unemployment rate declined in the first two quarters of 2020, and measured 9.9% in Q4 2020, up by 0.2 pp from the same period of 2019. After the introduction of the state of emergency in late Q1 and early Q2, persons unable to look for a job or start working due to the introduced measures were classified as inactive. Accordingly, unemployment figures went up in H2, mostly reflecting the transition of these persons from inactive to active unemployed persons, and, to a lesser extent, also the reduction in informal employment.

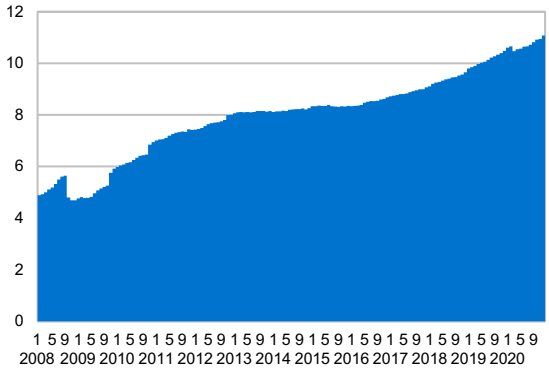
After mobility restriction measures were lifted, the majority of labour market indicators returned to their pre-crisis levels. The average monthly net wage in 2020 in the Republic of Serbia equalled RSD 60,073, up by 9.4% in nominal and 7.7% in real terms, compared to 2019.[33] The average pension equalled RSD 27,759, which is a nominal increase of 5.4% from the previous year.[34]

Household consumption related to recreation, cultural and sports events declined significantly amid the pandemic. The fall in household consumption would have been even sharper in 2020 if coordinated monetary, fiscal and prudential policy measures had not been taken in a timely manner. Thus, the introduction of two moratoria, the possibility to extend the repayment period for existing loans and one-off assistance to all citizens of age (EUR 100) led to higher disposable income of households. Total household savings continued up, strengthening the deposit base of the banking sector as the main source of lending activity. Resident FX savings reached EUR 11.1 bn at end-2020, which is a record high, up by EUR 601.3 mn from end-2019 (Chart I.6.1).

In 2020, the maturity structure of FX savings changed in favour of short-term savings, whose share in total FX savings increased by 6.1 pp to 84.9% (Chart I.6.2).

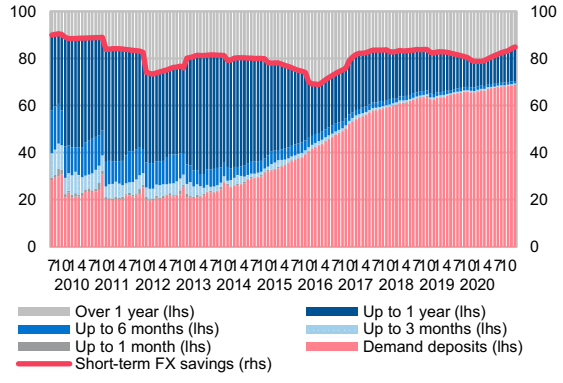
Dinar household savings continued to grow during 2020 as well, measuring RSD 92.5 bn at year-end, up by RSD 13.5 bn relative to end-2019. When observed over a longer time span, dinar savings have been on a constant rise, which signals that households' confidence in the

Chart I.6.1 **FX household savings**
(EUR bn)



Source: NBS.

Chart I.6.2 **FX household savings by maturity**
(%)

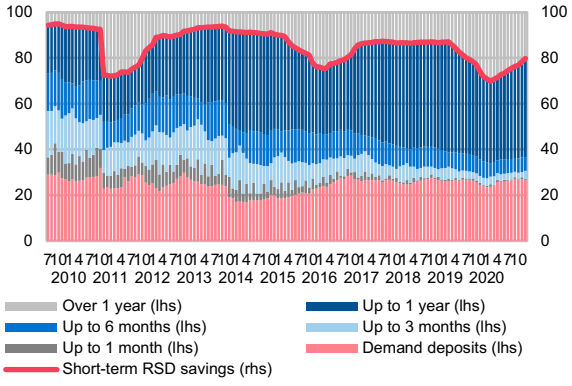


Source: NBS.

[33] Source: SORS.

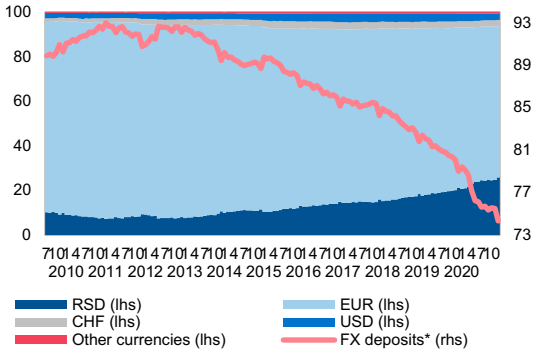
[34] Source: Pension and Disability Insurance Fund of the Republic of Serbia.

Chart I.6.3 **RSD household savings by maturity**
(%)



Source: NBS.

Chart I.6.4 **Currency structure of household deposits**
(%)



* The share of FX and FX-indexed deposits in total household deposits.
Source: NBS.

domestic currency is continuously increasing. This trend was not interrupted even during the pandemic-induced crisis. In addition to higher precautionary savings and changes in consumer habits due to the crisis, this was significantly supported by the timely measures of the Serbian Government and the NBS, which helped preserve households' confidence and alleviate the adverse effects of the pandemic on economic activity. As part of its strategy of financial system dinarisation, the NBS is promoting savings in the local currency and emphasizing their higher profitability, which is very important in the conditions of the pandemic-induced crisis. This bolsters financial stability given that a higher degree of dinarisation of the financial system ensures greater resilience to the risk of exchange rate volatility and shocks from the international environment.

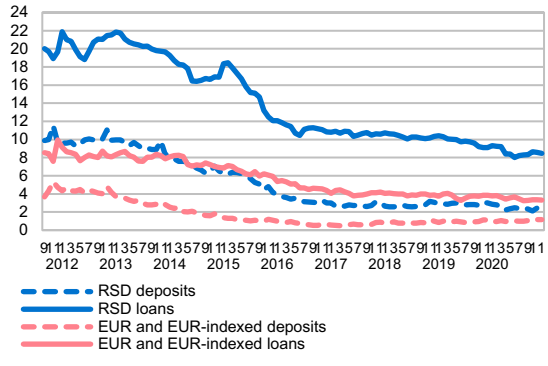
The analysis of the profitability of savings[35] shows that in the past eight years dinar savings were more profitable than euro savings, both in the short and long run. The analysis indicates that this is a result of low and stable inflation, relative stability of the EUR/RSD exchange rate, relatively higher interest rates on dinar compared to euro savings, and a more favourable tax treatment of savings in the domestic currency, as well as timely measures to mitigate the negative effects caused by the COVID-19 pandemic.

Chart I.6.3 shows that, similar to FX savings, due to the leap year effect, the maturity structure of dinar savings in 2020 changed in favour of short-term savings. Hence, their share in total dinar savings was 79.8% at end-2020.

At 25.7%, the share of dinar deposits in total household deposits[36] was 4.7 pp higher at end-2020 than at end-2019, which is positive from the aspect of financial stability. Though euro deposits still account for the majority of deposits (67.9%), their share is 4.1 pp lower than last year. At end-2020, the share of US dollar and Swiss franc deposits was low at 2.9% each (Chart I.6.4).

Interest rates on dinar savings lost 0.66 pp, equalling 2.35% at end-2020. At 1.16%, interest rates on euro household deposits were broadly unchanged from end-2019, and close to the lowest level recorded since the introduction of current interest rate statistics. Further monetary policy easing, in response to the adverse effects

Chart I.6.5 **Interest rates on RSD, EUR and EUR-indexed household loans and deposits – new business**
(weighted average, %)

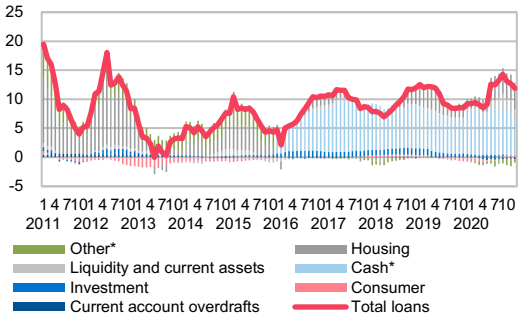


Source: NBS.

[35] https://nbs.rs/export/sites/NBS_site/documents-eng/publikacije/dinarizacija/analize/Analysis_dinar_and_FX_savings_2021.pdf

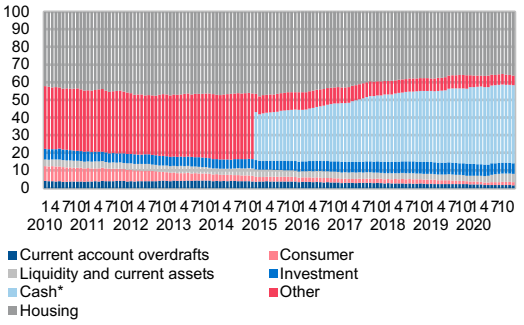
[36] The calculation includes the household sector without non-profit institutions.

Chart I.6.6 **Contributions to growth of bank claims on households by purpose**
(y-o-y growth rates, pp)



* Until December 2014, cash loans were included in the category of other loans.
Source: NBS.

Chart I.6.7 **Structure of bank claims on households by purpose**
(%)



* Until December 2014, cash loans were included in the category of other loans.
Source: NBS.

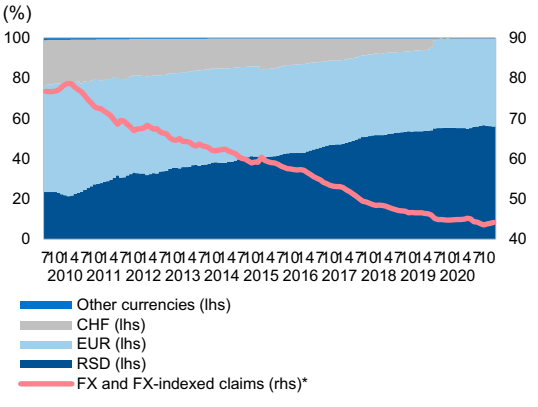
of the pandemic, and the resulting fall in dinar interest rates, coupled with low rates in the international money market and higher interbank competition, contributed to a further decline in household borrowing costs in 2020. The cost of dinar borrowing of the household sector subsided by 0.65 pp to 8.46% in December. In the same period, interest rates on new euro and euro-indexed loans dipped by 0.54 pp to 3.30% (Chart I.6.5).

Total receivables[37] from the household sector at end-2020 rose 11.8% in nominal terms relative to a year earlier (Chart I.6.6). Broken down by purpose, the highest contribution to nominal growth in household receivables came from cash loans (5.9 pp) and housing loans (4.5 pp). Excluding the exchange rate effect,[38] total household loans increased by 11.4% in 2020.

The volume of new household loans in 2020 was 19.7% lower than in 2019. This is largely attributable to the negative effects of the coronavirus pandemic which affected, through counter-pandemic measures, lending activity in April 2020 particularly hard. Lending activity recovered in the following months. Cash loans were approved the most, making up 57.2% of total new loans in 2020. Also, a significant amount of new loans referred to housing loans, which accounted for 21.4% of new household loans in 2020, slightly less than in 2019. At end-2020, there was a total of 159,766 housing loans worth RSD 450.5 bn in gross terms, accounting for 36.2% of all receivables. The share of cash loans edged up, reaching 44.3% at end-2020 (Chart I.6.7).

Dinar loans accounted for the major part (69.8%) of new household loans, up by 2.9 pp from 2019, also on account of regulations adopted by the NBS[39] which favour borrowing in dinars. Thanks to the prevalence of dinar loans to households, the increase in the share of banks' dinar receivables in total receivables from households continued during 2020. Relative to end-2019, the share of dinar receivables in total bank receivables from households rose by 0.6 pp to 55.9%, which is its record high so far (Chart I.6.8). This share was higher than the share of FX-indexed receivables (44.1%), where euro-indexed and euro receivables were dominant (43.8%).

Chart I.6.8 **Currency structure of bank claims on households**
(%)



* The share of FX and FX-indexed claims in total claims on households.
Source: NBS.

[37] Receivables include loans, interests, fees and other receivables. The household sector includes domestic natural persons, foreign natural persons – residents, private households with employed persons, registered agricultural producers and entrepreneurs.

[38] Calculated at the dinar exchange rate against the euro, Swiss franc and US dollar as at 30 September 2014 (the so-called programme exchange rate used for monitoring the performance under the latest arrangement with the IMF), taking into account the currency structure of loan receivables.

[39] Decision on Measures for Safeguarding and Strengthening Stability of the Financial System (RS Official Gazette, Nos 34/ 2011, 114/2017 and 84/2020).

The rise in dinar loans was mostly due to the increase in cash household loans, as they are almost entirely approved in dinars.

The efficient implementation of the NPL Resolution Strategy continued to yield excellent results in 2020. Hence, the share of NPLs in total loans to households came at 3.6% in December 2020, down by 0.3 pp relative to end-2019. Compared to a year earlier, the share of housing NPLs contracted by 0.6 pp to 2.5% at end-2020. This trend was also supported by the NBS's measures. Namely, in March 2020, the NBS adopted the decision to introduce a moratorium, i.e. suspension of debt repayment.[40] The moratorium lasted for minimum 90 days and applied to all borrowers (natural persons, farmers, entrepreneurs and corporates) who did not reject the offer within the set deadline. In July 2020, the NBS Executive Board adopted regulations allowing banks to offer, in 2020 and 2021, adequate facilities for the repayment of consumer, cash and other loans approved by 18 March 2020 (refinancing or change of maturity date of the last instalment under certain conditions) to borrowers who took out loans before the onset of emergency circumstances, without this affecting the bank's capital. Also, in its new decision[41], the NBS prescribed a second moratorium on the repayment of obligations maturing between 1 August 2020 and 30 September 2020, as well as a suspension of repayment of outstanding obligations which matured in July 2020.

In June 2020, regulatory preconditions were created for reducing the downpayment required for the approval of housing loans to first-time home buyers, provided that the amount of the loan does not exceed 90% of the value of the property mortgaged as determined by a certified valuer and reduced by the amount of other receivables secured by a first-rank mortgage over the same property. In practice, banks were allowed to reduce this amount from 20% to 10%.[42] In August 2020, the NBS adopted the Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons.[43] This Decision reduced the minimum degree of completion of a residential building required in order for its purchase to be financed from a housing loan with preferential treatment, allowed the housing loan repayment period to be extended by maximum five years, facilitated the granting of loans of up to 90,000 dinars to a natural person who does not receive his/her wage or pension via an account with that bank, with the maturity of up to two years. All three measures are applicable until end-2021. The purpose of these regulations is to reduce the negative effects of the coronavirus pandemic on households, while preserving financial stability and supporting economic growth.

The bulk of housing loans (65.35%) is insured with the National Mortgage Insurance Corporation. At end-2020, the number of insured loans was 104,414 (up by 4,194 from end-2019). The initially insured amount is EUR 3.50 bn, of which EUR 2.41 bn is outstanding. At the end of 2020, the Corporation portfolio contained 568 past due loans worth EUR 21.1 mn. These loans were declared past due because of difficulties in repayment and until mortgaged property is sold, the Corporation is the one paying the annuities. Compared to 2019, the number of these loans decreased by 378, while the amount of insured past due loans decreased by EUR 16.7 mn. Since the Corporation began to operate, 559 mortgages under insured housing loans were foreclosed. Among other things, it is important to emphasise that only a small number of NPLs is declared past due.

The table below contains the main indicators for the household sector for the period 2010–2020.

[40] Decision on Temporary Measures for Preserving Financial System Stability (RS Official Gazette, No 33/2020) and Decision on Temporary Measures for Lessors Aimed at Preserving Financial System Stability (RS Official Gazette, No 33/2020).

[41] Decision on Temporary Measures for Banks for the Purpose of Mitigating the Consequences of COVID-19 Pandemic in Order to Preserve Financial System Stability (RS Official Gazette, No 103/2020) and Decision on Temporary Measures for Financial Lessors for the Purpose of Mitigating the Consequences of COVID-19 Pandemic in Order to Preserve Financial System Stability (RS Official Gazette, No 103/2020).

[42] Decision Amending the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System (RS Official Gazette, Nos 34/2011, 114/2017 and 84/2020).

[43] Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons (RS Official Gazette, No 108/2020).

Table I.6.1 **Household sector performance indicators**
(%, unless indicated otherwise)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bank claims on households											
RSD bn	571.2	601.7	652.7	673.7	724.6	759.1	838.6	904.2	1,017.3	1,111.3	1,243.0
EUR mn	5,414.4	5,750.5	5,739.5	5,876.3	5,990.6	6,240.8	6,792.0	7,632.1	8,606.8	9,450.6	10,571.5
Total deposits of households											
RSD bn	792.9	855.2	988.7	1,044.6	1,125.9	1,165.5	1,258.0	1,275.9	1,393.5	1,558.7	1,751.6
EUR mn	7,515.5	8,172.7	8,694.2	9,111.6	9,308.6	9,582.9	10,188.8	10,769.6	11,789.9	13,254.7	14,897.1
FX bank claims to total claims[1]	72.4	67.4	65.0	62.1	59.0	57.2	53.0	48.3	46.4	44.7	44.1
FX to total deposits[1]	92.4	90.7	92.1	89.4	88.7	87.1	85.1	84.2	81.8	79.0	74.3
FX deposits to FX bank claims[1]	177.2	191.2	214.7	223.3	233.4	233.9	241.0	246.2	241.3	248.1	237.7
LTV ratio[2]	65.4	65.6	65.7	65.9	66.1	66.4	66.8	67.4	67.8	67.2	64.9
Average loan per resident											
RSD thousand	76.3	81.0	87.8	91.0	99.9	105.3	117.4	127.7	144.5	158.8	177.9
EUR	722.8	773.9	771.9	793.4	826.3	865.7	950.5	1,077.6	1,222.8	1,350.8	1,513.3
Average loan amount											
RSD thousand	427.6	439.6	460.4	489.9	511.1	472.2	483.9	483.8	516.3	553.1	564.0
EUR	4,052.8	4,201.4	4,049.0	4,273.1	4,225.3	3,882.5	3,918.7	4,083.5	4,368.4	4,703.4	4,796.5
Average loan per user											
RSD thousand	509.0	530.9	570.1	612.0	644.7	614.6	634.7	646.9	701.7	747.9	786.7
EUR	4,824.9	5,073.9	5,012.9	5,338.8	5,329.8	5,053.1	5,140.5	5,460.1	5,936.5	6,359.7	6,691.0

[1] FX claims and deposits include FX-indexed claims and deposits.

[2] For housing loans insured with the National Mortgage Insurance Corporation.

Sources: SORS, ASB, National Mortgage Insurance Corporation and NBS.

Text box 2: Macroprudential measures for alleviating the coronavirus impact in Serbia

Apart from health protection, as the primary and most important goal, the coronavirus pandemic posed numerous challenges before global and national economies and regulators in terms of preserving economic activity, labour market, as well as financial system and market stability. To this aim, on top of standard macroprudential measures, the NBS adopted a series of additional measures in 2020 in response to the pandemic-induced crisis. This made it one of the first institutions in the country and among the first central banks in the region to react to the pandemic by taking concrete measures supporting the domestic economy and citizens. The trimming of the key policy rate supported credit growth and thus the programme of economic measures adopted by the Serbian Government. In 2020, the NBS key policy rate was lowered four times, by a total of 1.25 pp, to 1.00% at year-end, its all-time low in the inflation targeting regime. The lowering of the key policy rate also translated to interest rates in the interbank money market. Apart from this, timely and adequate measures of the NBS supplied additional dinar and FX liquidity to the domestic financial sector, supporting uninterrupted corporate and household lending. Two dinar liquidity lines were made available to banks – additional FX swap purchase auctions and securities purchase repo auctions.

As a result of additional liquidity provision, the share of liquid assets in total banking sector assets increased to 37.3% at end-2020 (36.0% at end-2019). In July 2020, the NBS established a precautionary repo line in cooperation with the ECB in order to secure additional euro liquidity to the domestic financial system in case of need. Serbia faced this crisis from a much better macroeconomic position compared to prior crises, with the economic growth rate averaging 4.4% in 2018 and 2019, and low and stable inflation for the seventh consecutive year. In 2020, inflation remained low and stable measuring 1.6% on average (1.3% y-o-y in December 2020). The ensured relative stability of the EUR/RSD exchange rate throughout all previous years remained an important factor of low and stable inflation.

Speaking of capital buffer rates, the countercyclical capital buffer rate, which is set on a quarterly basis, was reviewed four times in 2020[44], while the list of systemically important banks in the Republic of Serbia and the capital buffer rate for those banks, which is reviewed annually, was adopted in May 2020. In view of persisting global uncertainty caused by the coronavirus spread, the countercyclical buffer rate was kept at 0%. Keeping the countercyclical capital buffer rate on hold contributes to mitigating the potential negative effects of the pandemic on corporate and household financing terms. Namely, credit standards are usually loosened during the upturn of the credit cycle, which may lead to excessive credit growth and, in conditions of inadequate credit risk management, trigger a rise in NPLs once the credit cycle turns downward. The introduction of the countercyclical capital buffer rate in the upturn phase helps to soften excessive credit growth and accumulate capital reserves. On the other hand, the release of these reserves during credit cycle downturn helps lending to continue in the crisis period as well, thus mitigating the negative effects on the overall economic activity.

According to the Decree on the Guarantee Scheme as a Measure of Support to the Economy Aimed at Mitigating the Consequences of the COVID-19 Pandemic Caused by the SARS-CoV-2 Virus, adopted in April 2020, the Republic of Serbia may guarantee for liquidity and working capital loans.[45] These measures helped to preserve the domestic lending which, supported by the accommodative monetary policy and guarantee scheme loans, posted an almost double digit growth, even amid the coronavirus-induced crisis. Growth of domestic real loans in December 2020 amounted to 9.9% y-o-y, with the household segment rising by 11.4% y-o-y and the corporate one by 9.1% y-o-y.

[44] The *2017Annual Financial Stability Report* offers more information about the countercyclical capital buffer rate (Text box 1).

[45] The Guarantee Scheme covers the loans disbursed by 31 January 2021 at the latest, on the following terms: loan repayment term is up to 36 months since disbursement, including a grace period of 9 to 12 months since the day of disbursement; the loan is approved in dinars or euros; it is repaid in monthly annuities; the interest rate is set by the bank, in line with its credit policy, not exceeding one-month BELIBOR plus 2.50% (one-month BELIBOR + 2.5 pp) for loans approved in dinars, and in the case of euro loans, interest rate not exceeding three-month EURIBOR plus 3.00% (three-month EURIBOR + 3.0 pp); loan collateral includes, as a minimum, the submission of bills of exchange of the loan beneficiary and the majority owner of the loan beneficiary, where the majority ownership means direct ownership equal to or exceeding 25%; the loan beneficiary will not pay out its share in the profit (dividends), nor repay loans extended by owners in the first year after the conclusion of the loan agreement. Also, the loan beneficiary will not, during the grace period, repay prematurely the outstanding loans with the same purpose to any other bank which are not included in the insured portfolio. Since the beginning of the Scheme's application and concluding with Q4 2020, commercial banks approved approximately EUR 1.5 bn under the Guarantee Scheme to micro, small and medium-sized enterprises and entrepreneurs. According to announcements of the Ministry of Finance, amendments of the Law on the Guarantee Scheme will enable the provision of additional EUR 500 mn to corporates and the extension of the Scheme's term.

During the coronavirus pandemic the NBS kept a proactive stance, taking numerous steps to support the domestic economy and preserve jobs and disposable income. In addition to those mentioned above, it took other measures to preserve the attained level of stability and to additionally strengthen the financial system amid potential risks caused by the emergency health situation at home and worldwide:

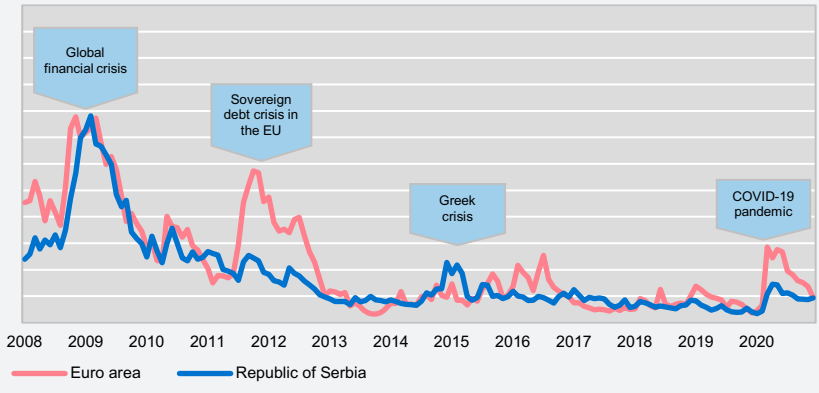
1) In March 2020, the NBS adopted **decisions imposing a moratorium on repayment of debtors' liabilities,** namely the Decision on Temporary Measures for Preserving Financial System Stability and Decision on Temporary Measures for Lessors Aimed at Preserving Financial System Stability. The moratorium was prescribed for all debtors that wish to use it (natural persons, farmers and entrepreneurs and corporates), and included a minimum 90-day suspension of debt payments. In July 2020, the NBS Executive Board adopted **regulations enabling banks and lessors to additionally postpone liabilities under loans**, loan products and lease. Further suspension in repayment of liabilities was prescribed by the Decision on Temporary Measures for Banks for the Purpose of Mitigating the Consequences of COVID-19 Pandemic in Order to Preserve Financial System Stability and the Decision on Temporary Measures for Financial Lessors for the Purpose of Mitigating the Consequences of COVID-19 Pandemic in Order to Preserve Financial System Stability. **Under the adopted regulations, debtors were allowed another moratorium on the repayment of liabilities to banks/lessors maturing from 1 August 2020 until 30 September 2020, as well as a moratorium on the repayment of liabilities which matured in July 2020 and remained outstanding.** The NPL share in total banking sector loans contracted significantly in the prior period, showing a marked declining trend thanks to the implementation of the NPL Resolution Strategy of the Serbian Government and the NBS and other regulatory activities of the NBS. These measures helped to further reduce the NPL share to 3.7% at end-December 2020, which is a 0.4 pp decrease from end-2019 and an 18.5 pp decrease from August 2015 when the Strategy was adopted. It is clear that NPLs do not pose a threat to financial system stability, bearing in mind their low level and high coverage by allowances for impairment, which equalled 59.0% in December 2020.

2) In June 2020, the NBS adopted the Decision Amending the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System, which laid down **regulatory preconditions for reduced downpayment at the time of housing loan approval to first-time home buyers**. In August 2020, the NBS adopted the Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons, which created preconditions for facilitating household access to financing. The aim of this NBS decision was to provide additional impetus to economic growth and to neutralise possible negative effects on households and corporates caused by the coronavirus pandemic, while preserving financial stability. **The decision envisages three sets of temporary measures aiming to facilitate household access to housing loans, and, by extension, support the corporate sector, more specifically the construction industry, through faster assets turnover, offering the possibility to extend the housing loan repayment term to maximum five years and temporarily facilitating the procedure for household access to short-term dinar loans up to a certain amount. Banks will be able to apply the adopted set of measures by end-2021.** The first of these measures pertains to the approval of new housing loans to citizens for the purchase of new housing. Easier access to housing loans also supports the construction sector, as an important factor of economic growth, by enabling faster asset turnover and also by preserving growth in this sector of the economy. The second measure is aimed at relaxing repayment terms for housing loans, especially for households that may potentially face financial constraints in the coming period, as well as households that wish to extend the repayment term for their liabilities. As this set of measures reflected positively on lending trends, housing loans recorded nominal growth of 13.7% y-o-y at end-December 2020, reaching their historically highest nominal amount of close to RSD 438 bn. Also, based on the said Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons, and in order to release credit potential, a bank may – for the purpose of determining capital conservation and systemic risk buffers within the meaning of the decision governing capital adequacy of banks – exclude from the calculation of risk-weighted assets the risk-weighted exposures based on some categories of new housing loans approved to natural persons, as defined by this Decision.

3) In December 2020, the NBS adopted the Decision on Temporary Measures for Banks to Enable Adequate Credit Risk Management amid COVID-19 Pandemic and the Decision on Temporary Measures for Financial Lessors to Enable Adequate Credit Risk Management amid COVID-19 Pandemic. **By these decisions, the NBS laid down measures and activities which banks and financial lessors are obligated to apply for the purpose of adequate credit risk management, which means timely detection of potential difficulties facing debtors and taking**

appropriate steps. The adopted measures will contribute to further strengthening of financial system stability, as confirmed by the conducted macroprudential stress tests, which demonstrated that the domestic banking sector would remain adequately capitalised, highly liquid and with low level of systemic risk even in the case of extremely negative movements and with sufficient capacity to absorb any risks it might be exposed to.[46] Sound capitalisation and liquidity of the domestic financial system is reflected in high values of the capital adequacy ratio (22.42%) and liquidity ratio (2.24) at end-2020, which are among the highest in the region.

Chart O.2.1 **Composite Indicator of Systemic Stress**
(normalised values)



Sources: NBS and ECB.

Also considered is the Composite Indicator of Systemic Stress (CISS)[47], which enables the monitoring of individual risk factors, as well as the overall level of systemic stress, and may timely point to potential crises in the financial cycle. The CISS was constructed with a view to identifying crisis periods and the level of systemic risk in the financial system of the Republic of Serbia, as well as to assessing the systemic stress component by offering significant information to decision makers about turbulences in financial markets and possible implications for financial and macroeconomic stability. The Serbian financial sector weathered numerous challenges during the global financial crisis and its aftermath, the sovereign debt crisis in the EU, the banking sector crisis in Greece, as well as the current challenges arising from the coronavirus pandemic (Chart O.2.1). Notably, the euro area CISS[48] points to disturbances in euro area markets in the prior period. Except during the period of the global financial crisis of 2008/2009, these indicators had no significant impact on movement of the same indicator for Serbia. The coronavirus pandemic brought emergency state measures in late Q1 2020, followed by rising uncertainties in international commodity and financial markets, flight to safe assets and a sharp contraction in global economic activity. This caused the CISS to go up, after touching its historical low in January 2020. The nascent global economic recovery from mid-2020 was slowed down by the renewed spread of the coronavirus since October, which led to the re-imposing of a range of restrictive measures in many countries. This way, uncertain movements in the international market impacted the level of the CISS in the second half of 2020. The continuous and timely improvement of regulatory measures by the NBS in 2020 created additional resilience of the financial system to potential stress, which is also reflected in the movement of Serbia's CISS which, despite a very turbulent year, remained stable and significantly below the level of systemic stress recorded in the euro area. This proves that the measures taken by the NBS and the Serbian government to mitigate the negative effects of the coronavirus pandemic were timely and adequate.

Even in conditions of immense uncertainty as to the further course of the pandemic, the priorities of central banks remain unchanged. As so far, the NBS's task is to continue its work on maintaining price and financial stability, with appropriate coordination of monetary and macroprudential policy measures, in order to mitigate the consequences of the largest health and economic crisis in recent history.

[46] See chapter Macroprudential stress tests.

[47] The *Annual Financial Stability Report - 2015* provides more methodological information about the CISS for the Republic of Serbia (Text box 8). Also, a more detailed analysis of this indicator is presented in chapter Financial Soundness Indicators.

[48] https://sdw.ecb.europa.eu/browseExplanation.do?node=9689686 data for the euro area (changing composition), Systemic Stress Composite Indicator, Index.

II Financial sector

Even amid the coronavirus pandemic in 2020 the Serbian banking sector, which makes up over 90% of financial sector assets, remained stable, owing to adequate capitalisation, high liquidity and profitability. Stable and sustainable lending growth of 9.9% was recorded at end-2020, driven by both supply- and demand-side factors. Increased volume of lending, systemic resolution of NPLs, and NBS measures aimed at mitigating the adverse impact of the coronavirus pandemic drove the NPL ratio in 2020 to its lowest level on record. The banking sector posted a positive net financial result in 2020, with 1.1% RoA and 6.5% RoE.

II.1 Banking sector

II.1.1 Capital adequacy

In 2020, the Serbian banking sector was adequately capitalised, as confirmed by CARs which ranged considerably above the prescribed regulatory minimum. At end-2020 CAR stood at 22.4%.

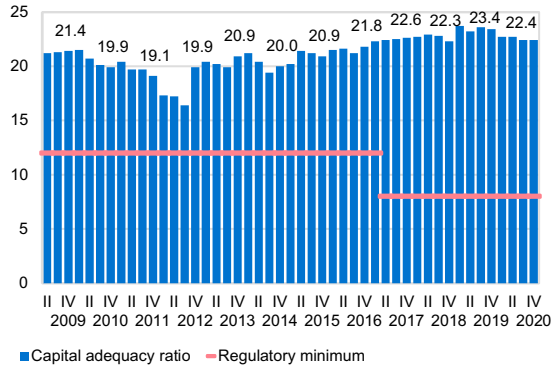
Capitalisation of the Serbian banking sector was above the region's average at end-2020. Owing to a quality capital base, high levels of Common Equity Tier 1 (CET 1) capital ratio (21.53%) and Tier 1 capital adequacy ratio (21.58%) were recorded.

At end-2020, CAR went down by 1.0 pp y-o-y due to the higher growth in total risk-weighted assets than in regulatory capital. CET 1 rose by RSD 11.6 bn, to RSD 600.0 bn. Regulatory capital increased by RSD 8.2 bn and amounted to RSD 624.9 bn at end-2020. At the same time, risk-weighted assets rose by RSD 150.1 bn, to RSD 2,787.0 bn, largely on account of the rise in bank lending.

According to end-2020 reports, banks allocated RSD 149.7 bn worth of CET 1, or 5.4% of risk-weighted assets by means of the combined capital buffer[49].

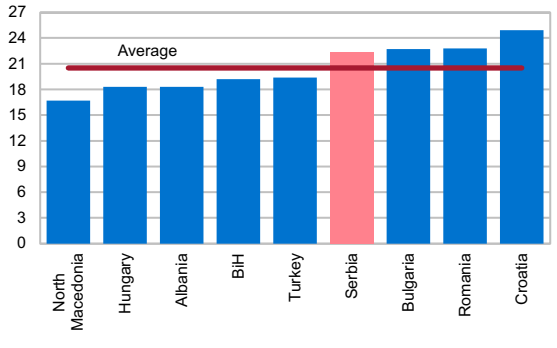
Maintenance of capital buffers above the prescribed regulatory minimum increases bank resilience to losses,

Chart II.1.1 **Banking sector capital adequacy**
(%)



Source: NBS.

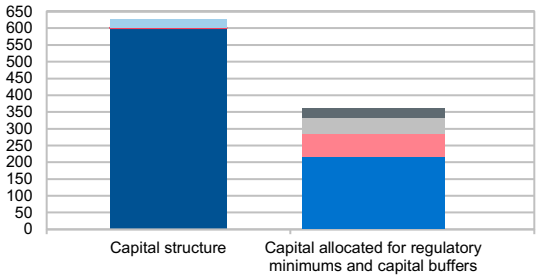
Chart II.1.2 **Regulatory capital to risk-weighted assets, countries of the region**
(2020, latest available data, %)



Sources: NBS and IMF.

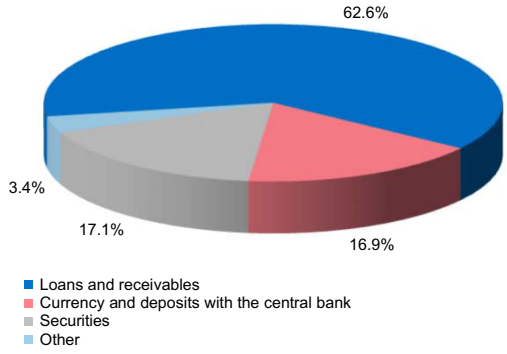
[49] The combined capital buffer consists of capital conservation buffer, countercyclical capital buffer, capital buffer for systemically important banks, and systemic risk buffer.

Chart II.1.3 **Structure of regulatory capital and capital buffers**
(2020 eop, RSD bn)



Source: NBS.

Chart II.1.4 **Structure of assets of the Republic of Serbia's banking sector**



Source: NBS.

decreases excessive exposures and limits capital allocation to contain systemic risks in the financial system. Relaxing the capital buffer requirements in times of shocks, such as the coronavirus pandemic, may boost lending activity. To facilitate natural persons' access to housing loans, in August 2020 the NBS enabled banks to use a portion of normally allocated buffers for financing this type of loans.[50]

Business models of Serbian banks are traditional and based on lending to corporates and households, so credit risk was the most prevalent risk in the Serbian banking sector in 2020 as well. Credit risk accounted for the largest share of risk-weighted assets (86.7%), while operational risk and market risk shares were lower (12.3% and 0.8%, respectively).

II.1.2 Level, structure and quality of assets

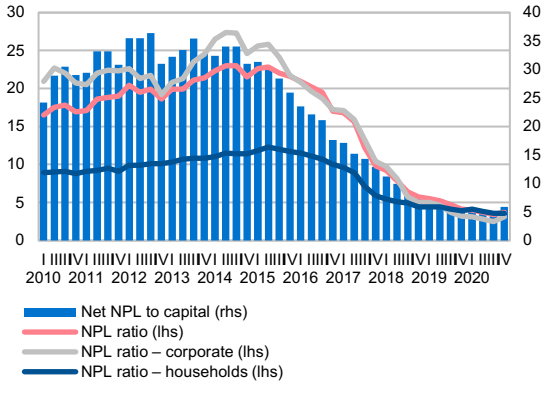
At end-2020, net assets of the banking sector amounted to RSD 4,601 bn, or over 84% of GDP. In terms of the ownership structure of the banking sector, the largest share was held by foreign-owned banks (86%), while state-owned banks and domestic private banks accounted for 7% each.

Loans and receivables accounted for 62.6% of total net assets, reflecting traditional bank business models focused on credit-deposit activities. Around 16.9% of assets related to currency and deposits with the central bank and 17.1% to securities, mostly Serbian government securities.

At end-2020, credit portfolio was worth RSD 2,650 bn. The bulk of the portfolio related to corporate loans (49.6%) and household loans (44.9%). Total net corporate loans stood at RSD 1,314 bn, of which 81.5% was in foreign currency (81.3% in euros). Total net household loans amounted to RSD 1,189 bn, of which RSD 525 bn (44%) were cash loans and RSD 442 bn (37%) housing loans. Household loans in foreign currency accounted for 45.0% of total household loans and almost all of them were in euros.

NPL ratio is a significant measure of asset quality, as loans account for the dominant share of total balance sheet assets of the domestic banking sector. The systemic approach to NPL resolution adopted in 2015, continued to be used in 2020, yielding excellent results. With a view to preventing the emergence of new NPLs, in December 2018 the Serbian Government adopted the NPL

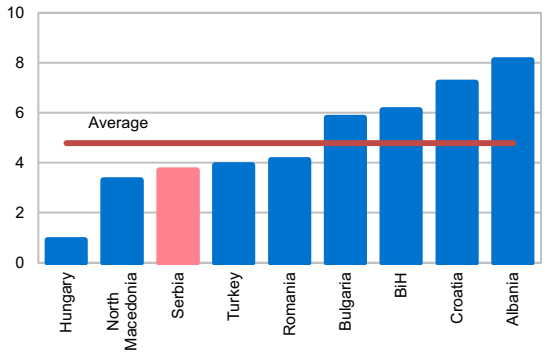
Chart II.1.5 **Non-performing loans**
(%)



Source: NBS.

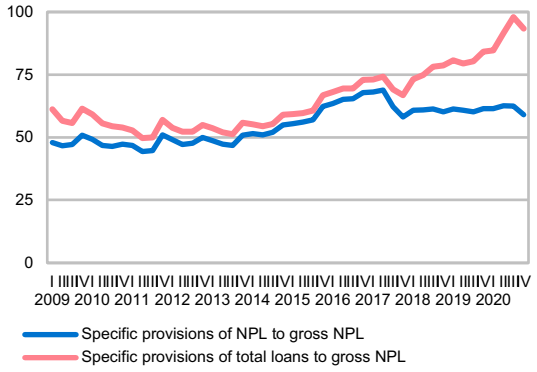
[50] Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons (RS Official Gazette, No 108/2020).

Chart II.1.6 **NPL ratios, countries of the region**
(2020, latest available data, %)



Sources: NBS and IMF: GFSR.

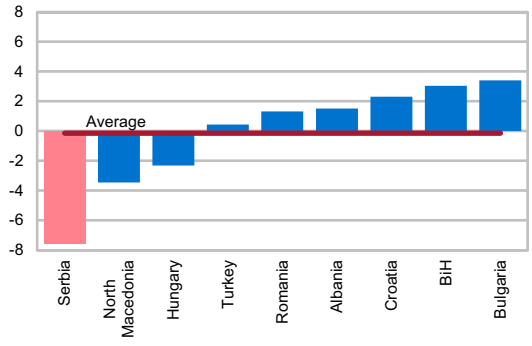
Chart II.1.8 **Coverage of non-performing loans**
(%)



Source: NBS.

Resolution Programme for the Period 2018–2020. What contributed to the further fall in the NPL ratio in 2020 in addition to the activities implemented under this Programme and additional NBS measures was the rise in lending. Also, in 2020 the NBS prescribed moratoria on loans to enable debtors affected by the coronavirus pandemic to settle their liabilities to banks, and thus prevent new NPLs. The first moratorium was introduced in March, with 90 days' duration and the second in July, with 60 days' duration. Moratorium was offered to all borrowers and the fact that a great number of them used it speaks of the timeliness and importance of these measures in terms of preventing new NPLs. At the end of the year the Serbian banking sector NPL ratio measured 3.7% and was 18.5 pp lower than in August 2015, when the NPL Resolution Strategy was adopted. In September 2020, the NPL share equalled 3.4% which is the lowest level of this bank portfolio quality indicator on record. However, in Q4 2020, the NPL share rose slightly reflecting the adverse effects of the pandemic and more loans maturing after the expiry of the second moratorium. In y-o-y terms, this indicator dropped by 0.4 pp on account of a rise in total gross loans by 11.0% or RSD 273.4 bn. In 2020 as a whole, RSD 11.9 bn worth of gross NPLs were written off, while a drop in the level of gross NPLs on account of assignment/sale amounted to RSD 2.1 bn.

Chart II.1.7 **Change in the NPL ratio, countries of the region**
(2020 relative to 2008, pp)



Sources: NBS and IMF: GFSR.

The share of NPLs in total corporate loans (public non-financial sector and companies) edged down by 0.1 pp y-o-y, to 3.1% in December 2020. Looking at individual components, the NPL ratio for companies fell by 0.2 pp, to 3.1%, while the NPL ratio of the public non-financial sector increased by 1.4 pp y-o-y, to 3.0% at end-2020. Sector-wise, the highest increase in NPLs was recorded in transport and warehousing, accommodation and food services, as well as information and communications, which was hit the hardest by the pandemic. Total NPLs of this sector increased by RSD 3.3 bn and their share in the sector's total gross loans by 1.4 pp, to 3.9%. On the other hand, the amount of NPLs dropped the most in the construction sector on account of positive real estate market developments and NBS measures aimed at supporting the construction industry (banks are encouraged to approve housing loans without waiting for the completion of the entire or most of the building, enabling thus easier access to housing loans and supporting the construction industry in turn, by means of faster turnover of assets). NPLs of this sector decreased by RSD 1.0 bn and their share in the sector's total gross loans by 1.2 pp, to 2.6%.

At end-2020, NPL share in total gross loans to households[51] came at 3.6%, down by 0.3 pp from end-2019. The y-o-y decrease reflected a rise in total gross household loans by RSD 142.4 bn and a concurrent increase in gross NPLs by RSD 1.5 bn. Housing loans provided the most effective contribution to the y-o-y drop in the NPL share of the household sector. NPLs in housing construction dropped by RSD 1.1 bn y-o-y, which, coupled with the increase in total housing loans by RSD 52.6 bn, pushed down their share in total housing construction loans by 0.6 pp y-o-y, to 2.5%. The share of non-performing in total cash loans remained almost unchanged, at 4.2%, with the RSD 2.9 bn increase in non-performing cash loans being offset by the RSD 65.6 bn rise in household cash loans.

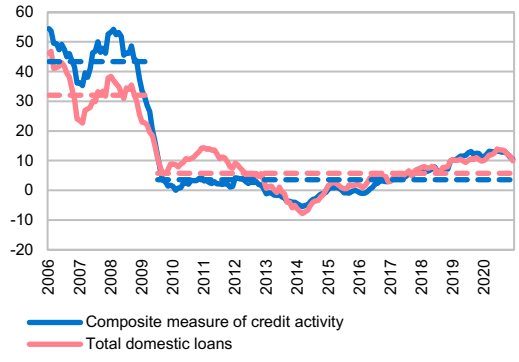
At end-2020, allowances for impairment covered 59.0% of total gross NPLs on average. A low level and solid coverage of NPLs with allowances for impairment ease the risk of NPLs becoming a source of financial system instability. This is also confirmed by the macroprudential solvency stress tests conducted by the NBS, which project changes in the NPL ratios over a period of one year to assess the resilience of the banking sector. According to the results of stress-testing, the banking sector would remain adequately capitalised even under the worst-case scenario[52].

II.1.3 Lending activity

In the face of the crisis caused by the coronavirus pandemic, domestic lending continued up in 2020, as a result of both supply- and demand-side factors. Loan supply was boosted by the continued NBS monetary policy easing, approval of loans under the Guarantee Scheme[53], as well as low interest rates in the international money market. On the other hand, loan demand went up amid increased needs for liquidity, debt restructuring and real estate purchase.

At end-2020, excluding the exchange rate effect[54], total domestic loans grew by 9.9% in y-o-y terms. Y-o-y growth decelerated slightly at the end of the year due to the high base effect from the previous year and higher amounts of loans maturing after the moratorium ended.

Chart II.1.9 **Lending trend***
(y-o-y growth rates, %)



* Excluding the exchange rate effect.
Source: NBS.

The rise in lending was driven by both household and corporate loans.

The rise in corporate lending in 2020 was powered by liquidity and working capital loans, as the most dominant categories, as well as by investment loans. Excluding the exchange rate effect, domestic corporate loans grew by 9.1% y-o-y. A significant portion of working capital loans were Guarantee Scheme loans intended for micro enterprises and SMEs, approved largely in dinars, which, coupled with low interest rates in the international money market and NBS key policy rate lowering contributed to the rise in dinarisation and hence, strengthening of financial stability.

The growth in domestic household loans was driven primarily by cash and housing loans, as the two most dominant categories. Excluding the exchange rate effect, domestic household loans grew by 11.4% y-o-y. Favourable terms of financing for households contributed to the rise in lending in this segment. In August 2020, the NBS adopted a set of measures to enable easier access to housing loans for households.[55] The measures were aimed at stimulating economic growth and preventing potential adverse effects of the coronavirus pandemic on households and corporates, along with preserving financial stability. In December 2020, the NBS passed additional measures aimed at facilitating the settlement of

[51] In addition to the household sector, households include entrepreneurs, private households with employed persons and registered farmers.

[52] For a more detailed account of macroprudential stress tests see Chapter II.2 Macroprudential stress tests.

[53] Pursuant to the Decree i.e. Law on Establishing a Guarantee Scheme as an Economic Support Measure to Mitigate the Consequences of the COVID-19 Disease Caused by Virus SARS-CoV-2 (RS Official Gazette, Nos 57/20 and 153/20).

[54] Calculated at the dinar exchange rate against the euro, Swiss franc and US dollar as at 30 September 2014 (the so-called programme exchange rate used for monitoring the performance under the arrangement with the IMF), taking into account the currency structure of loan receivables.

[55] Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons. (RS Official Gazette, No 108/2020).

liabilities to banks and financial lessors by debtors faced with difficulties due to the pandemic[56]. The facilities entail loan rescheduling and refinancing, with a grace period of six months and appropriate repayment deadline extension, so that monthly liabilities of debtors do not exceed the liabilities stipulated in the repayment schedule before the facility approval.

The Bank Lending Survey indicates that corporate credit standards were tightened after Q1 2020 due to greater risk aversion and anticipated worsening of the general economic situation, while higher costs of funding had less impact. The tightening of standards was the most pronounced in Q2, mitigating thereafter. In H2, the tightening of standards affected SMEs less than large enterprises, which is attributable to more favourable conditions of loan approval under the Guarantee Scheme. Collateral requirements were additionally tightened, the maximum amount reduced, and loan maturity shortened.

Credit standards for households were tightened in the first three quarters for cash, refinancing and housing loans, driven by the general increase in perceived risk, as in the case of corporate sector. In Q4, credit standards were eased on account of a positive real estate market outlook and greater interbank competition. In 2020, the NBS adopted a decision enabling banks to reduce the minimum downpayment for first-time home buyers from 20% to 10%. At the same time, the NBS lowered the minimum required level of completion of the building that can be purchased using housing loans with preferential regulatory treatment, which should contribute to a further rise in both real estate supply and demand.

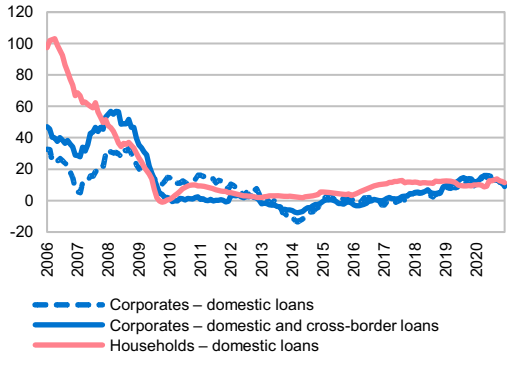
Corporate and household credit conditions were favourable for dinar loans. Interest rates on dinar loans to corporates came closer to the rates on euro loans, driven also by the NBS's Decision from July 2020 to pay a 50 bp higher remuneration rate on allocated required reserves in dinars to banks approving dinar loans under the Guarantee Scheme at interest rates at least 50 bp lower than the maximum interest rate.[57]

Corporate sector demand for loans increased in 2020, driven mainly by SMEs and their need to finance working capital and restructure debt. The financing of capital investments was reduced after Q1 due to the pandemic. Banks estimate that after a decrease in H1, household loan demand rebounded, primarily the demand for dinar cash, dinar refinancing and FX-indexed housing loans. The rise in household demand was driven by the need to refinance debt and purchase real estate.

II.1.4 Profitability

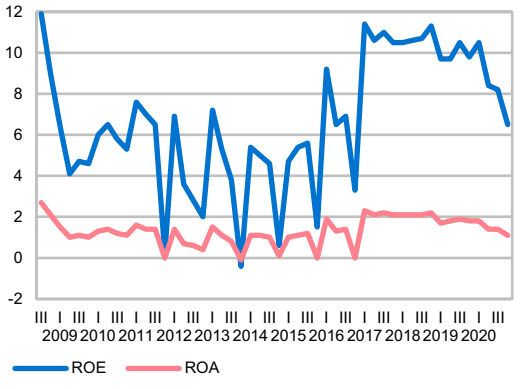
The Serbian banking sector posted a positive financial result in 2020. Banking sector profitability resulted in a 1.1% RoA and a 6.5% RoE at year end. RoA was a little above the average for the region, while RoE was below the regional average because of the high capitalisation of the domestic banking sector.

Chart II.1.10 **Corporate and household lending***
(y-o-y growth rates, %)



* Excluding the exchange rate effect.
Source: NBS.

Chart II.1.11 **Profitability indicators**
(%)

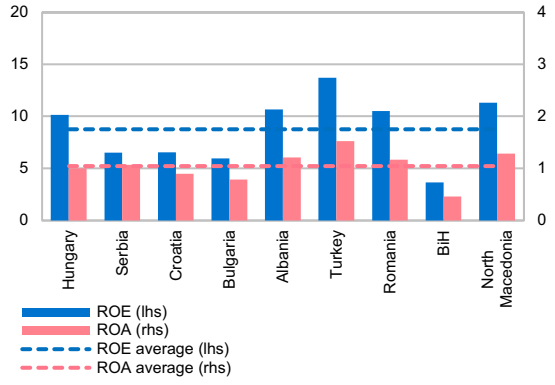


Source: NBS.

[56] Decision on Temporary Measures for Banks to Enable Adequate Credit Risk Management amid COVID-19 Pandemic (RS Official Gazette, No 150/20).

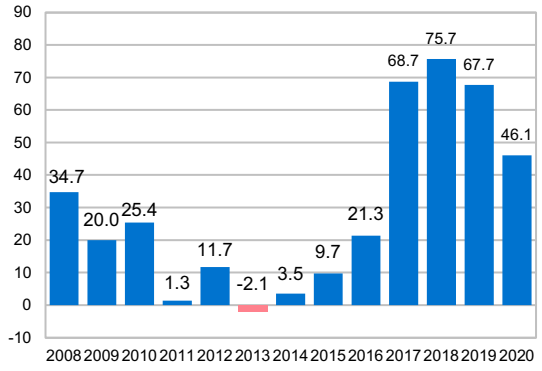
[57] https://nbs.rs/en/scripts/showcontent/index.html?id=15656

Chart II.1.12 **ROE and ROA, countries of the region**
(2020, latest available data, %)



Sources: NBS and IMF: GFSR.

Chart II.1.14 **Pre-tax profit/loss of the banking sector**
(RSD bn)



Source: NBS.

Domestic private banks recorded high profitability in 2020, followed by domestic state-owned banks and foreign banks from the EU, while foreign non-EU banks recorded low profitability (Chart II.1.13).

Banking sector net profit before tax amounted to RSD 46.1 bn in 2020, falling by RSD 21.6 bn (or 31.9%) from the previous year. A total profit of RSD 49.14 bn was made by 19 banks (93% of banking sector net assets), while seven banks operated at a loss totalling RSD 3.05 bn.

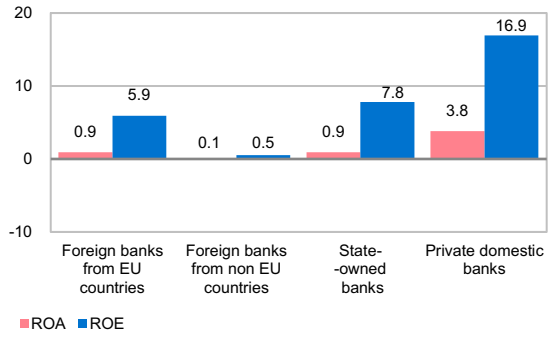
Owing to the rise in lending and given the traditional business model of domestic banks focused on credit and deposit operations, net income from interest and fees remained the most prevalent category in the structure of the final result. Observing the y-o-y change, net interest income contributed to the y-o-y rise in banks' net income by RSD 0.63 bn in 2020, while net fee and commission income declined by RSD 1.48 bn. Banks' financial result was affected more by net credit losses. Net losses from impairment of financial assets not measured at fair value through income statement increased by RSD 19.4 bn, pushing down the financial result. The y-o-y reduction in other income by RSD 7.8 bn worked in the same direction.

II.1.5 Liquidity

Liquidity of the Serbian banking sector remained exceptionally high in 2020, sustaining no adverse impact of the coronavirus pandemic and hence, posing no threat to financial stability.

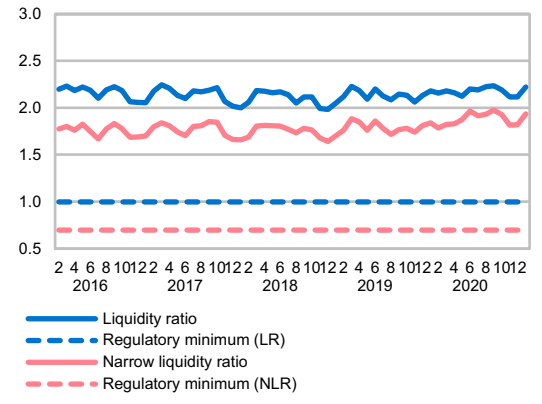
At end-2020, the average monthly liquidity ratio stood at 2.2, well above the regulatory minimum (1.0). The average monthly narrow liquidity ratio of 1.9 was also

Chart II.1.13 **Profitability indicators, by majority shareholder's country of origin and ownership structure in 2020**
(%)



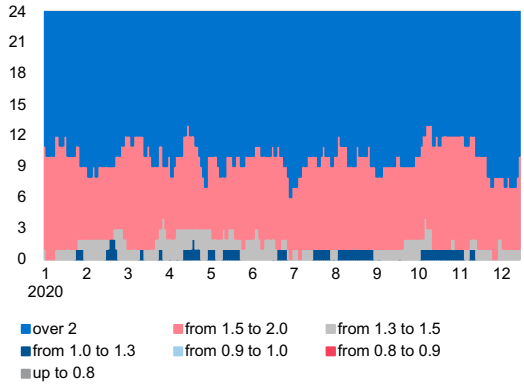
Source: NBS.

Chart II.1.15 **Average monthly liquidity ratio**



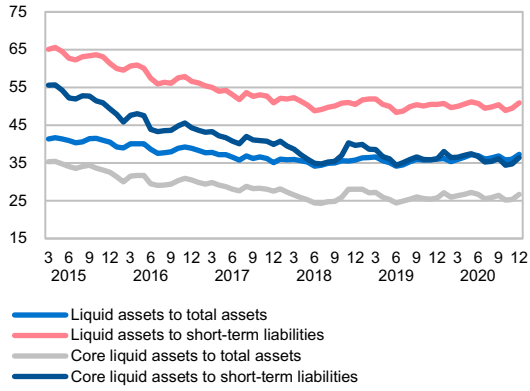
Source: NBS.

Chart II.1.16 **Distribution of liquidity ratio**
(number of banks)



Source: NBS.

Chart II.1.18 **Liquid assets**
(%)



Source: NBS.

significantly above the regulatory minimum (0.7). At 211.8%, the liquidity coverage ratio was also considerably above the limit set by the regulator (100%).

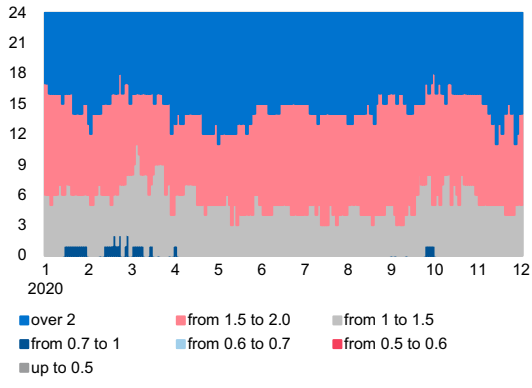
According to the results of stress tests, Serbia's banking sector would remain highly liquid even in the conditions of extreme deposit withdrawal. A decline in the liquidity ratio, observed in October each year, is due to the maturing of deposits termed during the "Savings Week", the remaining maturity of which then drops to under a month. The average monthly liquidity ratio is shown in Chart II.1.15, while Charts II.1.16 and II.1.17 show the distribution of liquidity ratio by bank.

At end-2020, liquid assets accounted for 37.3% of total assets and covered 50.9% of short-term liabilities. The share of liquid assets in the narrow sense in total assets and the coverage of short-term liabilities equalled 26.7% and 36.4%, respectively. High liquidity buffers contribute to the stability of the Serbian banking sector but may also decelerate its lending activity. While the high share of liquid assets carries low risk, it also brings lower returns.

II.1.6 Sources of funding

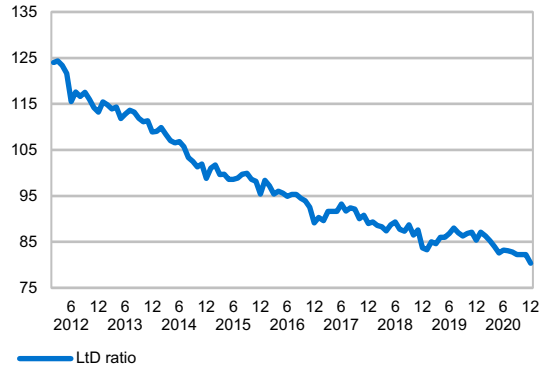
Banks operating in the Republic of Serbia rely mostly on domestic, stable sources of funding. The LtD ratio at end-2020 equalled 80.4% (Chart II.1.19). In 2020, the amount of deposits was sufficient to cover the amount of loans. Strengthening of the domestic deposit base has helped banks reduce their reliance on other sources of funding, e.g. on parent bank financing. This decreases banks' exposure to risks from the international environment. In particular, it decreases exposure to the risk of a sudden withdrawal of money by parent banks, which was one of

Chart II.1.17 **Distribution of narrow liquidity ratio**
(number of banks)



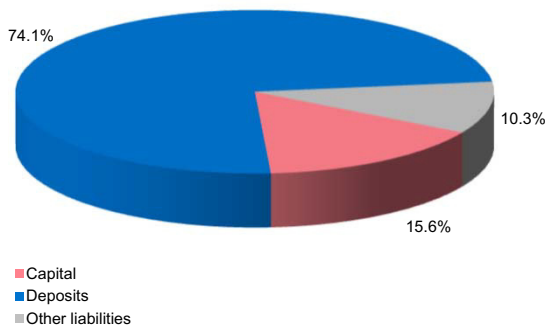
Source: NBS.

Chart II.1.19 **Movements of the loan-to-deposit ratio**
(%)



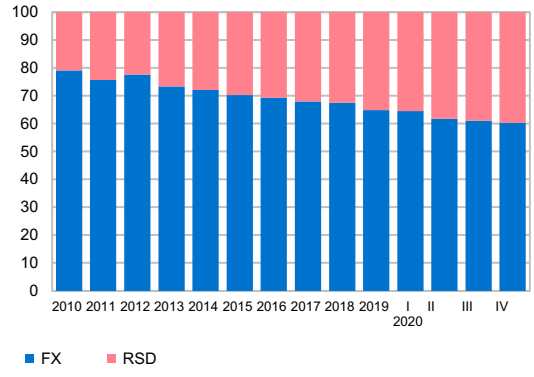
Source: NBS.

Chart II.1.20 **Sources of banking sector funding**



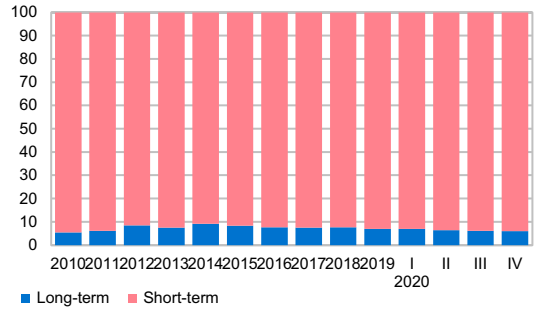
Source: NBS.

Chart II.1.21 **Currency structure of deposits**
(%)



Source: NBS.

Chart II.1.22 **Maturity structure of deposits***
(%)



* Long-term deposits consist of deposits maturing in over 1 year, while short-term deposits consist of deposits maturing within the next year, matured and sight deposits.

Source: NBS.

the challenges faced by countries of the region in the post-crisis period.[58]

At end-2020, deposits accounted for 74.1% and balance sheet capital for 15.6% of the total banking sector liabilities (Chart II.1.20). The share of total FX-denominated deposits (mainly in euros) was brought down from 64.8% y-o-y to 60.2% (Chart II.1.21). In terms of maturity composition, short-term deposits made up the largest share (94.0%) (Chart II.1.22).

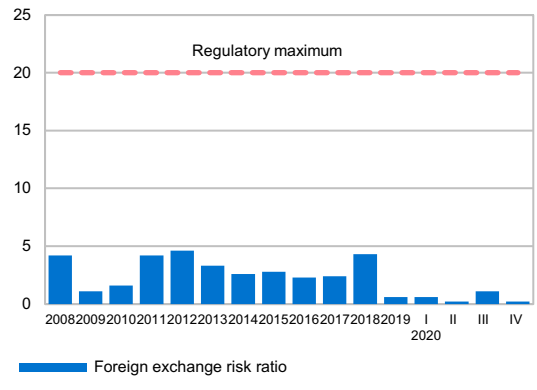
II.1.7 Sensitivity to market risks

The exposure of the Serbian banking sector to market risks is minimal.[59] In 2020, it was lower than a year earlier and referred to mere 0.84% of total risk-weighted assets.

The FX risk indicator was 0.17% at end-2020 (Chart II.1.23)[60], which is 0.4 pp below the last year's level and considerably below the regulatory maximum of 20.0%.

Bank assets and liabilities were matched in terms of the currency structure. Mostly reliant on FX sources of funding, banks hedged against the FX risk by extending loans with an FX clause. Looking from that angle, banks' FX position was well-balanced and they were not directly exposed to the FX risk. However, they were exposed to this risk indirectly, as the approval of FX-indexed loans to clients with the debt-income currency mismatch may generate FX-induced credit risk. In view of the banks' portfolio structure, it can be said that the risk of negative effects on banks' financial result and capital due to the direct impact of interest rate and exchange rate changes is minimal.

Chart II.1.23 **Foreign exchange risk ratio**
(%)



Source: NBS.

[58] *Annual Financial Stability Report – 2012*, I.1 International environment.

[59] Market risks include price risk, foreign exchange risk and commodity risk.
[60] Calculated under net principle.

Table II.1.1 **Serbia: Key macroprudential indicators**
(in % unless otherwise indicated)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Capital Adequacy													
Regulatory capital to risk-weighted assets	21.9	21.4	19.9	19.1	19.9	20.9	20.0	20.9	21.8	22.6	22.3	23.4	22.4
Regulatory Tier 1 capital to risk-weighted assets	17.9	16.5	15.9	18.1	19.0	19.3	17.6	18.8	20.0	21.6	21.1	22.4	21.6
Nonperforming loans net of provisions to regulatory capital	15.5	26.9	35.5	52.1	52.3	55.9	56.0	44.0	27.1	17.7	9.7	6.3	6.7
Regulatory Tier 1 capital to assets	16.8	13.1	12.8	11.5	11.6	11.2	10.1	10.7	11.6	13.7	13.5	14.4	13.1
Large exposures to capital	-	-	-	110.1	104.5	90.4	130.5	115.7	86.0	69.3	77.4	66.5	73.8
Regulatory capital to assets	20.5	17.1	16.1	12.2	12.2	12.2	11.4	11.9	12.7	14.4	14.2	15.1	13.6
Asset quality													
Nonperforming loans to total gross loans	11.3	15.7	16.9	19.0	18.6	21.4	21.5	21.6	17.0	9.8	5.7	4.1	3.7
Sectoral distribution of loans to total loans - Deposit takers	1.1	0.6	0.1	0.1	0.3	0.3	0.8	0.1	0.5	0.3	0.4	0.4	0.3
Sectoral distribution of loans to total loans - Central bank	6.6	10.9	2.8	6.5	2.1	5.8	0.4	1.6	1.7	2.1	0.7	2.8	1.1
Sectoral distribution of loans to total loans - General government	0.9	1.7	3.5	3.4	3.0	2.3	2.3	1.7	1.5	1.3	1.1	1.5	1.6
Sectoral distribution of loans to total loans - Other financial corporations	0.7	0.5	1.2	1.6	1.6	1.6	0.5	0.7	0.9	0.9	0.8	0.8	0.8
Sectoral distribution of loans to total loans - Nonfinancial corporations	52.4	53.3	57.0	54.9	58.2	54.1	56.3	55.9	52.6	50.5	50.0	49.2	49.6
Sectoral distribution of loans to total loans - Agriculture	3.3	3.1	3.0	2.8	3.0	2.7	3.5	3.7	3.6	3.5	3.5	3.5	3.3
Sectoral distribution of loans to total loans - Industry	18.4	17.9	19.3	17.2	17.9	18.4	19.2	18.4	16.5	16.2	16.5	15.0	15.0
Sectoral distribution of loans to total loans - Construction	5.7	5.3	6.9	6.2	5.8	4.6	4.2	3.8	4.1	4.0	4.2	4.8	5.1
Sectoral distribution of loans to total loans - Trade	16.9	17.3	16.6	14.7	15.0	13.5	13.9	13.9	14.3	14.6	14.0	13.7	13.3
Sectoral distribution of loans to total loans - Other loans to nonfinancial corporations	8.1	9.8	11.3	13.9	16.5	14.9	15.6	16.2	14.1	12.2	11.8	12.3	13.0
Sectoral distribution of loans to total loans - Households and NPISH	35.3	32.2	33.3	31.9	33.0	34.8	38.3	39.1	41.5	42.9	44.3	43.8	45.0
Sectoral distribution of loans to total loans - Households and NPISH of which: mortgage loans to total loans	13.9	13.7	15.4	15.0	16.1	16.8	18.0	18.1	17.9	16.9	16.8	15.8	16.4
Sectoral distribution of loans to total loans - Foreign sector	2.8	0.8	2.0	1.6	1.9	1.1	1.4	0.9	1.4	2.0	2.6	1.5	1.6
IFRS provision for NPLs to gross NPLs	56.9	50.9	47.2	51.0	50.0	50.9	54.9	62.3	67.8	58.1	60.2	61.5	59.0
IFRS provision of total loans to total gross loans	8.2	9.6	9.1	10.8	10.2	11.9	12.7	14.4	12.4	6.6	4.5	3.4	3.5
Earnings and profitability													
Return on assets	2.1	1.0	1.1	0.0	0.4	-0.1	0.1	0.3	0.7	2.1	2.2	1.8	1.1
Return on equity	9.0	4.6	5.3	0.2	2.0	-0.4	0.6	1.5	3.3	10.5	11.3	9.8	6.5
Interest margin to gross income	60.5	62.6	64.2	67.3	64.4	67.5	66.6	65.7	64.6	58.4	60.0	58.8	60.6
Noninterest expenses to gross income	62.3	65.6	65.7	67.5	65.9	68.3	66.9	64.9	67.7	63.2	62.1	63.4	66.3
Personnel expenses to noninterest expenses	36.8	37.3	37.4	35.9	35.7	35.1	33.6	33.0	33.4	32.9	34.0	32.5	33.8
Liquidity													
Core liquid assets to total assets	47.8	48.2	41.8	40.3	35.2	36.1	35.7	32.5	30.5	27.5	28.0	25.7	26.7
Core liquid assets to short-term liabilities	75.7	73.8	67.1	67.3	58.9	58.3	56.3	49.3	44.3	39.9	39.6	36.1	36.4
Liquid assets to total assets	47.8	49.0	43.7	42.3	38.9	41.0	42.2	40.5	38.9	35.1	35.7	36.0	37.3
Liquid assets to short-term liabilities	75.7	75.1	70.1	70.6	65.0	66.4	66.7	61.3	56.6	50.9	50.5	50.5	50.9
Customer deposits to total (noninterbank) loans	82.7	88.3	80.1	83.1	84.9	92.3	95.7	99.7	108.1	106.9	110.6	109.2	116.4
Foreign currency-denominated loans to total loans	73.9	75.8	76.8	69.8	74.1	71.6	70.1	72.3	69.4	67.5	68.5	67.1	64.7
Average monthy liquidity ratio	1.8	1.9	2.0	2.2	2.1	2.4	2.2	2.1	2.1	2.0	2.0	2.2	2.2
Average monthy narrow liquidity ratio	1.2	1.2	1.3	1.5	1.6	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.9
Sensitivity to market risk													
Net open position in foreign exchange to regulatory capital	4.2	1.1	1.6	4.2	4.6	3.3	2.6	2.8	2.3	2.4	4.3	0.6	0.2
Foreign currency-denominated liabilities to total liabilities	74.3	77.7	81.8	79.0	80.1	76.7	74.7	72.7	71.1	69.7	69.3	66.6	62.3
Classified off-balance sheet items to classified balance sheet assets	56.2	43.3	33.9	32.0	26.1	28.7	27.6	30.6	32.4	36.4	36.8	39.7	36.3

Source: NBS.

Table II.1.2 **Serbia: Financial sector structure**

	2014			2015			2016			2017			2018			2019			2020		
		Assets			Assets			Assets			Assets			Assets			Assets			Assets	
	No.	RSD billion	%	No.	RSD billion	%	No.	RSD billion	%	No.	RSD billion	%	No.	RSD billion	%	No.	RSD billion	%	No.	RSD billion	%
Financial sector	76	3,226	100	77	3,329	100	76	3,556	100	73	3,714	100	72	4,179	100	70	4,532	100	69	5,078	100
(in % of GDP)		*77.5%*			*77.2%*			*78.7%*			*78.1%*			*82.6%*			*83.8%*			*92.9%*	
Banking system	29	2,969	92.0	30	3,048	91.6	30	3,242	91.2	29	3,369	90.7	27	3,774	90.3	26	4,084	90.1	26	4,601	90.6
State-owned banks	6	571	17.7	6	550	16.5	6	561	15.8	6	544	14.6	5	660	15.8	4	686	15.1	3	325	6.4
Local private banks	2	187	5.8	1	179	5.4	2	195	5.5	2	236	6.4	2	266	6.4	3	305	6.7	3	319	6.3
Foreign-owned banks	21	2,211	68.5	23	2,319	69.7	22	2,486	69.9	21	2,590	69.7	20	2,848	68.1	19	3,093	68.3	20	3,958	77.9
Greek	4	418	13.0	4	395	11.9	4	403	11.3	2	210	5.6	1	169	4.1	1	177	3.9	1	196	3.9
Italian	2	738	22.9	2	796	23.9	2	884	24.8	2	928	25.0	2	1,008	24.1	2	1,094	24.1	2	1,204	23.7
French	3	304	9.4	3	316	9.5	3	327	9.2	2	375	10.1	2	415	9.9	1	119	2.6	1	152	3.0
Austrian	3	441	13.7	3	453	13.6	3	494	13.9	2	427	11.5	2	495	11.8	2	550	12.1	2	665	13.1
Hungarian	1	41	1.3	1	45	1.4	1	48	1.3	2	196	5.3	2	221	5.3	2	551	12.1	2	615	12.1
Slovenian	2	39	1.2	2	38	1.1	1	34	1.0	1	44	1.2	1	57	1.4	1	72	1.6	2	540	10.6
Other	6	230	7.1	8	276	8.3	8	296	8.3	10	411	11.1	10	481	11.5	10	530	11.7	10	586	11.5
Nonbank financial institutions	47	257	8.0	47	281	8.4	46	315	8.8	44	344	9.3	45	406	9.7	44	448	9.9	43	477	9.4
Insurance companies	25	168	5.2	24	192	5.8	23	216	6.1	21	233	6.3	21	279	6.7	20	300	6.6	20	314	6.2
Pension funds	6	24	0.7	7	29	0.9	7	33	0.9	7	36	1.0	7	40	1.0	7	45	1.0	7	47	0.9
Leasing companies	16	65	2.0	16	60	1.8	16	66	1.9	16	75	2.0	17	87	2.1	17	103	2.3	16	115	2.3

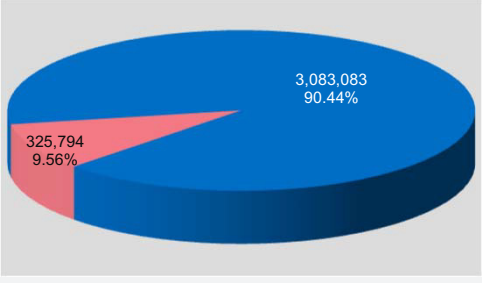
Source: NBS.

Text box 3: Effects of moratorium on financial stability

In cooperation with other Serbian institutions, the NBS efficiently and decisively undertook a series of activities to support Serbian corporates and households, in order to mitigate the economic fallout from the pandemic and preserve financial stability in extraordinary circumstances. As one of the first central banks in Europe, in March 2020, the NBS adopted the Decision on Temporary Measures for Preserving Financial System Stability[61] and Decision on Temporary Measures for Lessors Aimed at Preserving Financial System Stability[62], providing debtors with a three-month moratorium at the moment when it was needed the most, in view of the uncertainty caused by the pandemic. The stipulated moratorium envisaged the postponed settlement of loan liabilities to banks, including other liabilities to banks or lessors for all debtors who opted for this possibility (natural persons, farmers, entrepreneurs and companies). During the state of emergency, banks did not calculate the default rate on due, unsettled receivables and did not initiate enforcement or enforced collection procedures. After the moratorium ends, the debtors should continue with the regular settlement of liabilities and thus the payment period was extended by three months, that is, by the duration of moratorium.

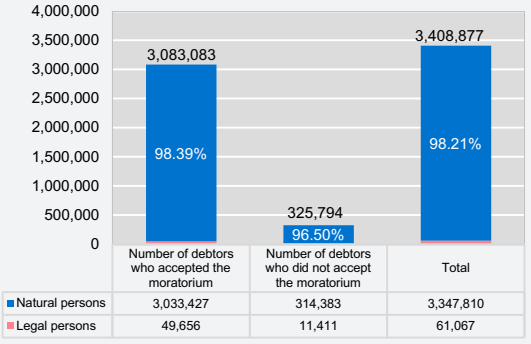
There was a great interest of both citizens and companies in the moratorium. According to bank information, the total number of debtors who accepted the first moratorium was 3,083,083 (90%), of which 49,656 were legal entities (81% of all legal entities), and 3,033,427 were natural persons (91% of all natural persons). Natural persons accounted for 98.4% of the total number of debtors who accepted the first moratorium (they accounted for over 98.2% of all debtors), and legal entities for 1.6%. The high share of debtors who accepted the moratorium does not mean that they all had payment difficulties but indicates their heightened caution and wish to protect themselves against potential risks.

Chart O.3.1 **Effects of the first moratorium**
(as at 31 May 2020)



Source: NBS.

Chart O.3.2 **Effects of the first moratorium**
(as at 31 May 2020)



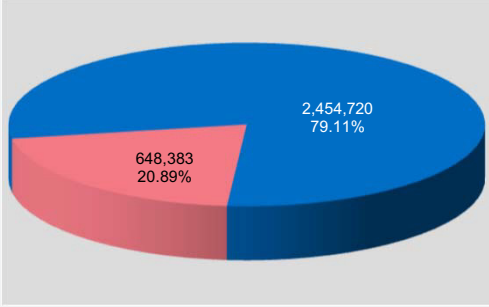
Source: NBS.

In view of the duration of the emergency health situation, with the adoption of relevant regulations[63] in July 2020, households and corporates were given access to another moratorium which envisaged an additional postponement of the settlement of liabilities due on 1 August until 30 September 2020 and the moratorium on liabilities that were due in July of the same year and had not been settled yet.

The total number of debtors who accepted the second moratorium was somewhat lower, at 2,454,720 (79%), of which 43,270 were legal entities (66% of all legal entities), and 2,411,450 were natural persons (79% of all natural persons). Natural persons accounted for 98.2% of the total number of debtors who accepted the second moratorium, and legal entities for 1.8%.

[61] RS Official Gazette, No 33/2020.
[62] RS Official Gazette, No 33/2020.
[63] Decision on Temporary Measures for Banks Aimed at Mitigating the Impact of the COVID-19 Pandemic and Preserving Financial System Stability (RS Official Gazette, No 103/2020) and Decision on Temporary Measures for Lessors Aimed at Mitigating the Impact of the COVID-19 Pandemic and Preserving Financial System Stability (RS Official Gazette, No 103/2020).

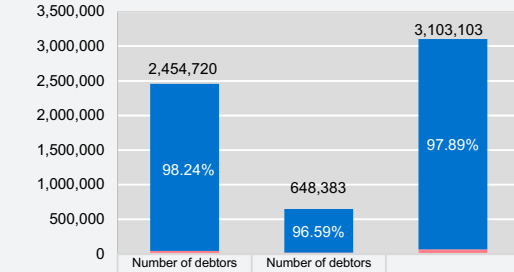
Chart O.3.3 **Effects of the second moratorium**
(as at 30 September 2020)



■ Number of debtors who accepted the second moratorium
■ Number of debtors who did not accept the second moratorium

Source: NBS.

Chart O.3.4 **Effects of the second moratorium**
(as at 30 September 2020)



	Number of debtors who accepted the moratorium	Number of debtors who did not accept the moratorium	Total
Natural persons	2,411,450	626,271	3,037,721
Legal persons	43,270	22,112	65,382

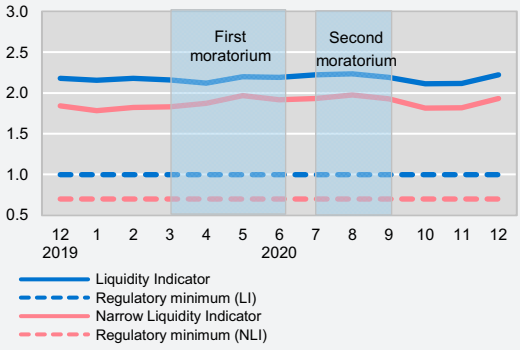
Source: NBS.

According to the Association of Serbian Banks, the share of debtors which accepted the second moratorium was higher for micro and small enterprises, hit by the pandemic more, while almost a half of medium-sized and large enterprises (which account for the bulk of corporate loan users) decided to continue with their payments. Natural persons also accepted moratorium for lower amounts of loans. A half of households using housing loans opted for the moratorium, while the share of cash loan, credit card, and current account overdraft users who used this opportunity was significantly higher.[64]

The fact that a great number of debtors (both households and corporates) accepted both stipulated moratoriums speaks of significance and timeliness of the adoption of such decisions. Adopting the decision on moratorium, the NBS facilitated the burden of the crisis for our citizens and companies. Owing to moratorium, their disposable income increased and the negative impact of the pandemic on domestic demand and economic activity decreased.

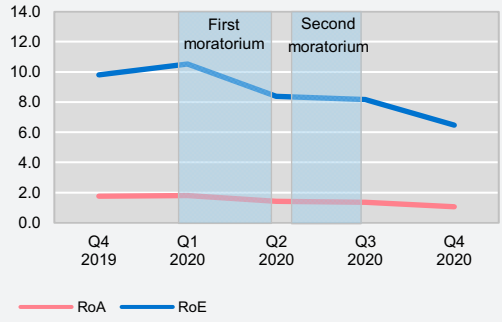
Though in specific circumstances moratorium may affect the liquidity and profitability of banks, the domestic banks remained highly liquid and profitable for the duration of both moratoriums. Bank liquidity indicators trended significantly above the prescribed minimums, throughout the year, including the moratorium duration periods. The prescribed moratorium did not reflect largely on banking sector profitability either. Even though the banking sector result and profitability indicators were lower than the year before, they remained above the average for the region.

Chart O.3.5 **Average monthly liquidity indicator**



Source: NBS.

Chart O.3.6 **Profitability indicators**
(%)

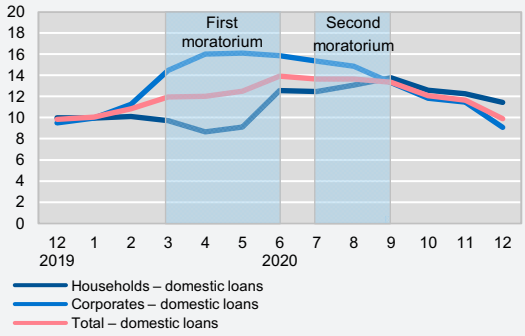


Source: NBS.

[64] Credit Report, September 2020, https://www.ubs-asb.com/en/about-us/credit-bureau/credit-bureau-report-1.

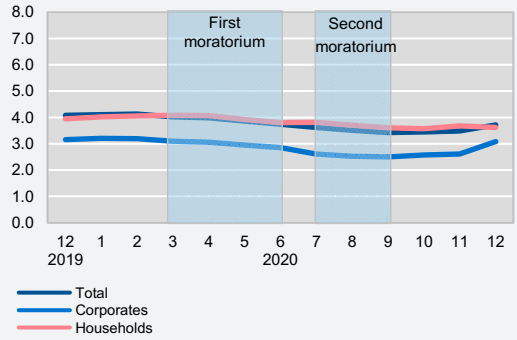
Corporate and household lending continued growing even during the pandemic and thus provided support to economic activity. The share of NPLs in total loans and in corporate and household loans continued dropping for the duration of moratoriums. Even though in Q4 2020, the share of NPLs rose slightly due to the adverse effects of the pandemic and higher loan maturities after the expiry of the second moratorium, the said share (3.7%) at end-2020 was below the 2019 level (4.1%). The moratoriums had a positive impact on NPLs as they were introduced at the moments when the debtors needed them the most. Moratoriums enabled the most jeopardised debtors to consolidate their business at the peak of the pandemic after which they could continue with the settlement of their liabilities. In this way, the possibility for the build-up of new NPLs was significantly reduced.

Chart O.3.7 **Lending***
(y-o-y growth rates, %)



* Excluding the exchange rate effect.
Source: NBS.

Chart O.3.8 **Share of NPLs**
(%)



Source: NBS.

To prevent the potential future difficulties in the settlement of liabilities for debtors affected by the coronavirus pandemic, in December 2020, the NBS prescribed[65] the obligation for banks and lessors to approve settlement facilities for debtors (natural persons, farmers, entrepreneurs and companies) who were not able to settle their liabilities due to the circumstances caused by the coronavirus pandemic, i.e. may have difficulties settling them, at their request. The NBS estimated that there was the need for facilitating the financial position of unemployed persons, debtors with low average monthly income, debtors with high debt-to-income ratio whose monthly income decreased and debtors with reduced business income in 2020 or those whose business was suspended due to the pandemic. The right to the said facilities was also granted to debtors who were in default longer than 30 days on the relevant dates and the amounts of their debt on any grounds stipulated in the decision were significant. In addition, banks and lessors had the possibility of granting the facility to debtors at their reasonable request if due to other facts and circumstances they assessed that the financial position of the debtor deteriorated, and the settlement of liabilities became impossible.

Unlike the first and second moratorium which applied to all debtors, the regulations from December 2020 were aimed at facilitating the settlement of liabilities for those debtors who were hit the most by the pandemic while others will continue with regular settlement of their liabilities. In addition to reducing the adverse effects of the pandemic, such a targeted measure preserves bank capacities for further lending, providing support to further economic growth and maintenance of financial stability. Facilities in the form of moratorium on liabilities to banks and lessors and all the other NBS measures enabled preservation of bank credit portfolio quality, support to liquidity of all sectors, more favourable financing conditions, preservation of lending and support to the domestic real sector. Acting timely and in coordination with the Government, the NBS gave a significant contribution to efforts to mitigate the economic impact of the coronavirus in order to preserve production capacities and jobs. All the measures were carefully designed and had limited duration, whereby high capitalisation of the banking sector was maintained, bank liquidity preserved and financial system stability safeguarded.

[65] Decision on Temporary Measures for Banks to Enable Adequate Credit Risk Management amid COVID-19 Pandemic (RS Official Gazette, No 150/2020) and Decision on Temporary Measures for Lessors to Enable Adequate Credit Risk Management amid COVID-19 Pandemic (RS Official Gazette, No 150/2020).

II.2 Macroprudential stress tests

Systemic risks in the banking sector must be continuously monitored in order to further strengthen the financial stability function, protect depositors and enhance consumer confidence in the banking system. The results of macroprudential stress tests confirm that Serbia's banking sector as a whole remains highly resilient to the assumed shocks, including the most severe ones, and that it has sufficient capacity to absorb the consequences of the risks to which it could be exposed amid the coronavirus pandemic. Also, the network structure indicates a low and stable systemic risk component, i.e. the system's high resilience in case of individual shocks.

The NBS conducts quarterly macroprudential stress tests[66] in order to assess the vulnerability and resilience of the financial system as a whole, as well as to assess the impact of the macroeconomic environment on individual financial institutions and banking groups. The assumptions underlying macroprudential stress tests have been tightened to reflect elevated uncertainty caused by the COVID-19 pandemic. Also, in order to assess Serbia's banking sector systemic risk, the dynamics of interbank relations are considered and potential ways of risk transmission among financial institutions are analysed on the basis of network modelling.

Basel III[67] standards and NBS regulations require that banks too should use stress tests to assess their capital adequacy. Stress tests are based on plausible but highly unlikely assumptions, or events that may produce negative effects on the entire financial system. Therefore, poor stress test results do not necessarily mean that a sector, an individual bank or a group of banks are faced with higher risks, but rather indicate the capacity of banks to keep operating smoothly in case such events materialise.

Macroprudential stress tests conducted by the NBS enable the following:

– measurement of banking sector resilience to an increase in credit risk caused by the assumed adverse macroeconomic developments;

– measurement of the liquidity risk caused by the assumed loss of depositors' confidence and unfavourable macroeconomic conditions;

– application of network modelling to assess banking sector systemic risk and systemic importance of individual financial institutions;

– application of network modelling to assess the transmission of systemic risk from the real to the financial sector and the systemic importance of groups of connected enterprises.

This *Report* sets out *three parts* of the analysis of the impact of the assumed economic shocks on banking sector stability. *The first* part involves credit risk assessment in relation to predefined macroeconomic scenarios. *The second* involves the assessment of whether the banking sector is able to continue operating smoothly in case of a significant deposit withdrawal and banks' need for additional liquidity. *The third* part involves the assessment of the banking sector systemic risk – whether the current structure of banks' interconnectedness is conducive to the propagation of shocks across the entire banking sector, i.e. the assessment of how resilient the entire system is to potential shocks.

Solvency stress testing

Of the large set of variables eligible for econometric analysis[68], which could affect the monthly NPL dynamics, three displayed reliable predictive power: (1) nominal exchange rate, (2) seasonally-adjusted real net wages and (3) the key policy rate. Elasticity coefficients (assessing the impact of each variable on NPLs) and individual contributions of each variable to any change in NPLs are presented in Table II.2.1. According to model specification, a change in the exchange rate would have the greatest impact on a change in gross NPLs (0.51

Table II.2.1 **Elasticity coefficients of NPLs and contributions of independent variables from Q4 2019 to Q4 2020**

	Elasticity coefficients	Contributions of independent variables (pp)
Nominal exchange rate	0.51	0.00
Seasonally-adjusted real net wages	-0.21	-0.19
Key policy rate	0.03	-0.70

Source: NBS.

[66] *Guidelines on stress testing and supervisory stress testing, EBA/CP/2015/28.*

[67] The regulatory framework of Basel III standards is applied as of 30 June 2017.

[68] A detailed explanation of the applied econometric model is available in the *Annual Financial Stability Report – 2017*, Text box 3.

elasticity coefficient), followed by a change in seasonally-adjusted real net wages (-0.21) and changes in the key policy rate (0.03).

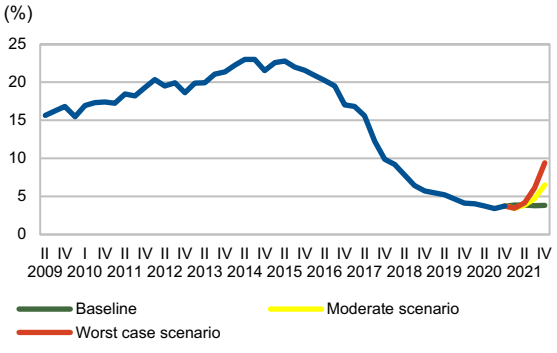
For stress test purposes, three macroeconomic scenarios are assumed over a one-year horizon (Table II.2.2). All three scenarios of key policy rate movements are conditional on the assumed path of the exchange rate and its impact on inflation. The projection of nominal net wages was made independently, based on the ARIMA model. The projection of real net wages was made by excluding the impact of projected inflation on wage growth, under relevant scenarios.

Table II.2.2 **Overview of scenarios**

	Baseline	Moderate	Worst case
Y-o-y growth in NPL ratio (pp)	0.10	2.81	5.73
Y-o-y depreciation of RSD against EUR (%)	0.49	16.49	34.02
Y-o-y change in key policy rate (pp)	/	9.00	17.25
Y-o-y growth in real net wages (%)	-2.64	-13.05	-22.92

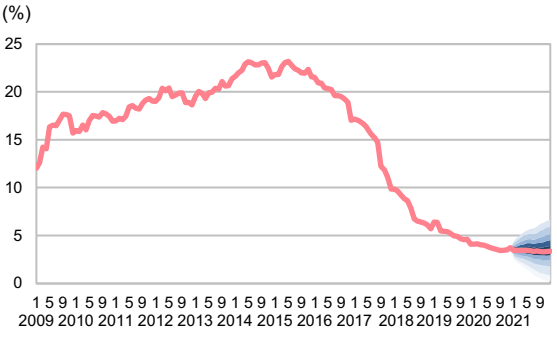
Source: NBS.

Chart II.2.1 **Share of gross NPLs in baseline, moderate and worst case scenario***



* NBS estimate.
Source: NBS.

Chart II.2.2 **Projection of the share of gross NPLs in total loans***



* NBS estimate.
Source: NBS.

Chart II.2.1 shows the projected change in the share of NPLs in total loans for the three assumed scenarios: 0.10 pp, 2.81 pp and 5.73 pp, respectively.

The projected movement with confidence intervals of 90% for the baseline scenario (the most probable scenario) is presented in Chart II.2.2.

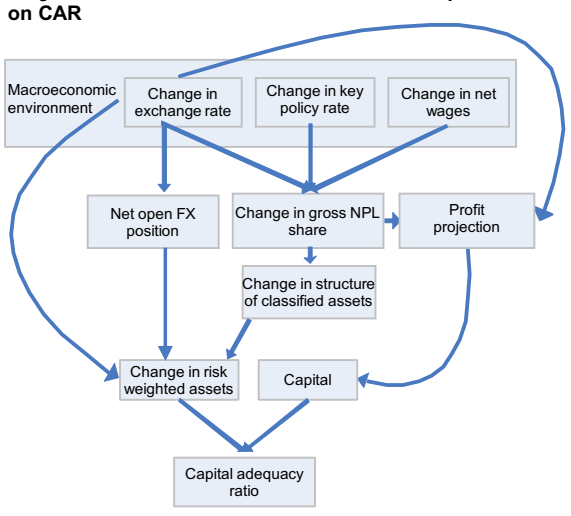
Assessment of the resilience of the banking sector and individual banks assuming a profit buffer

For the purposes of this analysis, banking sector resilience is defined as a change in the capital adequacy ratio (CAR) at assumed changes in variables which directly and indirectly impact the CAR level. If the CAR remains above the regulatory minimum over the entire projection period, the banking sector as a whole is considered to be resilient.

The CAR level is directly affected by the changes in risk-weighted assets, as well as by the changes in capital positions due to the inclusion of the financial result, issuance of new shares or, for instance, increase in deductibles from capital. However, there are also significant indirect effects, the most important being those of the exchange rate and projected profit, amendments to regulations, etc. When conducting macroprudential stress tests, depending on movements in macroeconomic variables, the financial result before tax is projected. When projecting profit, the write-off of receivables is also taken into consideration assuming a deterioration in asset quality.

The impact of the exchange rate on the share of NPLs is not the only channel through which the exchange rate affects capital adequacy (Diagram II.2.1). The exchange rate also affects the level of capital requirements for FX risk coverage. Given the high level of asset euroisation, the exchange rate affects the revaluation of risk-weighted assets. Finally, the exchange rate influences banking sector profits which serve as a buffer against losses, and

Diagram II.2.1 **Channels of macroeconomic impact on CAR**



it also affects the level of capital allocated to cover capital buffers.

In line with the Decision on Capital Adequacy of Banks, commercial banks are required, at all times, to keep their CAR levels at no less than:

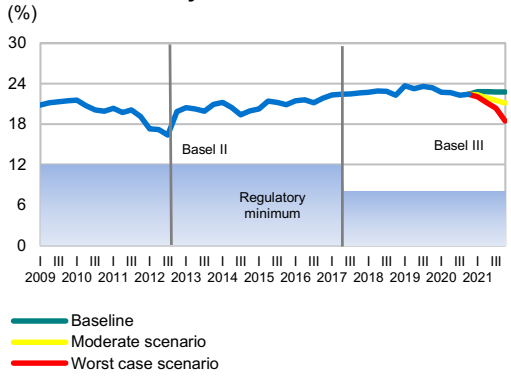
– 4.5% for Common Equity Tier 1 capital ratio;

– 6% for Tier 1 capital ratio;

– 8% for (total) capital adequacy ratio.

Also, in addition to meeting these requirements, a bank is required to maintain, at all times, its capital at a level necessary to cover all risks to which it is or may be exposed in its operations, i.e. at least at the level necessary for maintaining higher capital adequacy ratios, if such bank was determined higher than prescribed capital adequacy ratios by the National Bank of Serbia, in line with Section 5 of this Decision.

Chart II.2.3 **CAR by stress scenario***



* NBS estimate.
Source: NBS.

Capital buffers are additional Common Equity Tier 1 capital, above the regulatory minimum. The goal of introducing capital buffers is to mitigate the cyclical dimension of systemic risk (countercyclical capital buffer and capital conservation buffer) and its structural dimension (systemic risk buffer and capital buffer for systemically important banks).

Capital buffers include:[69]

– capital conservation buffer (2.5% of risk-weighted assets);

– countercyclical capital buffer (0% of risk-weighted assets);

– systemic risk buffer (3% of FX and FX-indexed bank exposures to corporates and households in Serbia);

– capital buffer for systemically important banks (1% or 2% of risk-weighted assets).

As at 31 December 2020, Common Equity Tier 1 capital ratio and regulatory capital adequacy ratio for the Serbian banking sector measured 21.53% and 22.42%, respectively.

Under the baseline scenario, Common Equity Tier 1 capital ratio would be 21.88%, and regulatory capital adequacy ratio – 22.78%.

Under the moderate scenario, these ratios would measure 20.29% and 21.13%, respectively.

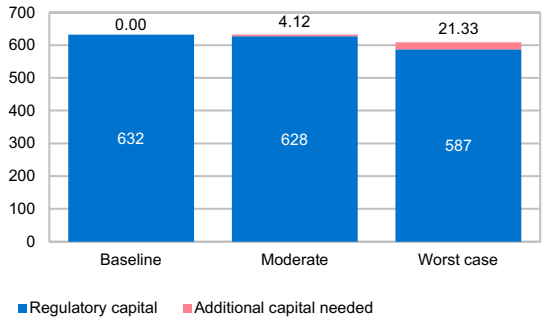
Under the worst-case scenario, implying a powerful but highly improbable shock, Common Equity Tier 1 capital ratio would be 17.69%, and regulatory capital adequacy ratio – 18.47%.

Needs for recapitalisation and/or reduction in risk-weighted assets

Based on data as at 31 December 2020, and under the **baseline scenario** assumptions, there is no need for the recapitalisation of banks in order to meet the requirements for Common Equity Tier 1 capital ratio of 4.5% of risk-weighted assets, Tier 1 capital ratio of 6% of risk-weighted assets and regulatory capital adequacy ratio of 8% of risk-weighted assets, or the increased capital adequacy ratios in line with the Decision on Capital

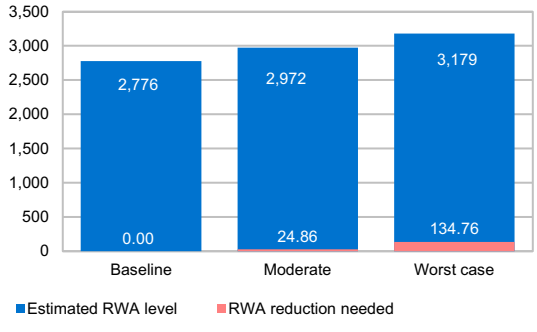
[69] https://nbs.rs/en/ciljevi-i-funkcije/finansijska-stabilnost/zastitni_slojevi_kapitala/index.html

Chart II.2.4 **Capital levels by scenario with projected profit buffer***
(RSD bn)



* NBS estimate.
Source: NBS.

Chart II.2.5 **Risk-weighted assets by scenario with projected profit buffer***
(RSD bn)



* NBS estimate.
Source: NBS.

Adequacy of Banks. Also, all banks would have sufficient Common Equity Tier 1 capital for the coverage of all prescribed capital buffers.

Assuming a projected profit buffer[70], Chart II.2.4 shows the movement in the level of regulatory capital by scenario, while Chart II.2.5 shows the movement in the value of risk-weighted assets by scenario.

Under the assumptions of the **moderate scenario**, banks would need additional capital of around RSD 4.12 bn, or 0.66% of the regulatory capital at the banking sector level. An alternative to capital increase would be a RSD 24.86 bn decrease in risk-weighted assets, which accounts for 0.84% of the banking sector's risk-weighted assets.

Under the assumptions of the **worst-case scenario**, banks would need additional capital of around RSD 21.33 bn, or 3.63% of the regulatory capital at banking sector level. An alternative to capital increase would be a RSD 134.8 bn decrease in risk-weighted assets, which accounts for 4.24% of the banking sector's risk-weighted assets.[71]

NPLs that bring CAR to threshold

The final stage of solvency stress tests aims to determine the share of NPLs that would bring the banking sector CAR down to the threshold, with all of the prescribed regulatory minimums, and/or higher capital adequacy ratios in line with the Decision on Capital Adequacy, plus the established capital buffers, being met.

In the conditions of a significant deterioration in the macroeconomic environment which would drive the share of gross NPLs in total loans up by 7.29 pp, the banking sector's regulatory capital adequacy ratio could drop from the initial 22.42% to the threshold level of 16.45% over a one-year span. However, it should be noted that the probability of such increase in the share of NPLs in total loans, which would bring the CAR down to the threshold, is extremely low, i.e. the calculated probability that such event would materialise is close to zero.

Determining leverage ratio values by scenario

According to the Decision on Reporting Requirements for Banks, banks are required to compile and submit to the NBS reports about the ratio of their Tier 1 capital and total exposure amount – the leverage ratio.[72] The introduction of the leverage ratio has two aims: to limit the amount of capital which banks may use and to ensure complementary measures for capital assessment regardless of the estimated risk. The recommendation of Basel III standards is to keep the leverage ratio at a 3% minimum.

[70] Depending, inter alia, on macroeconomic variables, a projection is made of the pre-tax financial result, or of the profit buffer, as the first line of defence from assumed losses. In case of an insufficient amount of the profit buffer, the losses would reflect negatively on the bank's capital.

[71] Banks which fail to meet the combined capital buffer requirement are subject to restrictions in profit distribution and are obligated to submit to the NBS a capital conservation plan in accordance with the Decision on Capital Adequacy of Banks (RS Official Gazette, Nos 103/2016, 103/2018, 88/2019, 67/2020, 98/2020 and 137/2020).

[72] RS Official Gazette, Nos 125/2014, 4/2015, 111/2015, 61/2016, 69/2016 and 103/2016, 101/2017, 46/2018, 8/2019, 27/2020, 67/2020 and 137/2020.

The leverage ratio for the Serbian banking sector at end-2020 equalled 12.40%. Under the baseline scenario, the leverage ratio would measure 12.48, while under the moderate and worst-case scenarios, this ratio would amount to 11.27% and 9.66%, respectively.

Liquidity stress tests

The liquidity risk in Serbia's banking sector is not as pronounced as the credit risk. However, the sudden deposit withdrawal in late 2008 as a result of a temporary loss of confidence in the European parents of banks operating in Serbia indicates the importance of monitoring this risk.[73]

Liquidity stress testing aims to determine whether the banking sector could continue to operate normally in case of the same or a stronger shock. In addition to deposit withdrawal, other factors can also depress liquidity on the liabilities side, including the inability to refinance, or strained access to new sources of funding. Likewise, factors on the assets side may include the unexpected use of credit lines, contraction in market liquidity, lower value of assets, etc., which would further impair the bank's liquidity position.

Liquidity ratio assessment

The analysis of the deposit withdrawal shock that lasted from September 2008 to January 2009 served to create the following scenarios:

– déjà vu scenario, envisaging a deposit withdrawal worth RSD 363 bn (11% of total deposits) and the same structure of deposit withdrawal as recorded in the above period;

– risk spillover scenario, implying the spillover of the liquidity crisis from parent groups into Serbia's financial sector; in addition to the deposit withdrawal in October 2008, this scenario also envisages the lack of support from parent banks due to the international banking crisis, which raises total deposit withdrawal to RSD 505 bn (15% of total deposits);

– worst-case scenario, envisaging a shock two times stronger than in October 2008, i.e. a deposit withdrawal of RSD 717 bn (21% of total deposits).

For the purposes of this analysis, deposits are divided into two main groups – demand and time deposits.

Table II.2.3 **Assumptions of deposit withdrawals by sector**

DEPOSIT WITHDRAWAL	Déjà vu 2008	Spillover	Worst case
Banks - demand	0%	60%	60%
Corporate - demand	10%	10%	20%
Household - demand	12%	20%	24%
Government - demand	23%	23%	35%
Other demand deposits	11%	15%	22%
Time deposits	11%	13%	20%
Marketability of 2nd class liquid assets	100%	100%	80%
Stocks and bonds listed on the stock exchange	100%	100%	40%
Total of deposits withdrawn (RSD bn)	363	505	717
Share in total deposits (%)	11%	15%	21%

Source: NBS.

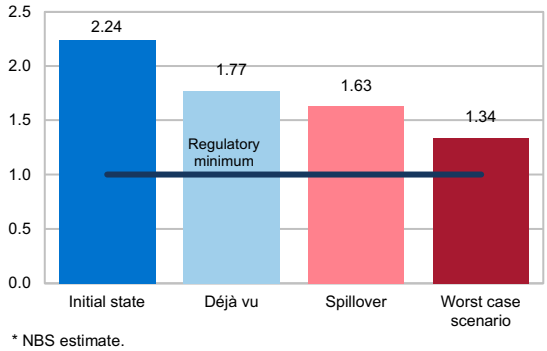
Deposit withdrawal assumptions for all three scenarios are presented in Table II.2.3.

In the scenarios described above, the banking sector liquidity ratio would range from 2.24, where it stood on 31 December 2020, to 1.34 in the worst-case scenario (Chart II.2.6).

According to the initial data and the déjà vu scenario, the liquidity ratios of all banks would be above the regulatory minimum.

In the risk spillover scenario, the liquidity ratio would fall below the regulatory minimum for banks holding 5.2% of total banking sector balance sheet assets, while in the worst-case scenario, assuming a severe shock, it

Chart II.2.6 **Liquidity ratio for the banking sector by stress scenario***



* NBS estimate.

Source: NBS.

[73] For a more detailed description of the deposit withdrawal in late 2008, see the *Annual Financial Stability Report – 2012*.

would fall below the regulatory minimum for banks accounting for 27.2% of total banking sector balance sheet assets. The largest number of banks would stay in the safe zone, with liquidity ratios above 1.0.

The Decision on Liquidity Risk Management by Banks, applied as of 30 June 2017, introduced a new liquidity ratio – Liquidity Coverage Ratio. This ratio was introduced in order to ensure a bank's resilience to liquidity shocks over a 30-day span.[74] According to bank reports as at 31 December 2020, all banks disclosed the liquidity coverage ratio, aggregately by all currencies, above the regulatory minimum, while at banking sector level this ratio stood at 2.12.

Liquidity needs

Based on reported data as at 31 December 2020, as well as according to the déjà vu scenario, there is no need for additional first-order liquidity.

Under the risk spillover scenario, first-order liquidity needs would equal around RSD 4.3 bn or 0.3% of the initial first-order liquidity, whereas in the worst-case scenario, first-order liquidity needs would be RSD 26.8 bn or 1.8% of the initial first-order liquidity.

If the assumed scenarios materialised, the NBS could react by providing additional liquidity or by exercising its lender of last resort function.[75]

Deposit withdrawal values that bring the liquidity ratio to threshold

The present liquidity risk analysis aims to determine the values of deposit withdrawals from the banking sector and individual banks that would lower the liquidity ratio from the reported level to 1.5 and 1.0, respectively.

Based on Table II.2.3, the structure of deposit withdrawal by deposit category in total withdrawn deposits was derived for the déjà vu scenario (Table II.2.4).

The liquidity ratio would fall to 1.5 in case of withdrawal of around RSD 600.1 bn or 17.7% of total deposits (of which around RSD 434.3 bn are demand and around RSD 165.8 bn are time deposits). In case of withdrawal of RSD 1090.1 bn or 32.1% of total deposits (of which RSD 788.9 bn are demand and RSD 301.1 bn are time deposits), the system as a whole would stay at the liquidity threshold, with a liquidity ratio of 1.0.

Table II.2.4 **Derived structure for share of deposit withdrawals by depositor category in total deposits withdrawn**

	Déjà vu
Withdrawal of demand deposits	72%
Withdrawal of time deposits	28%
Structure of total demand deposit withdrawal	
Banks	0%
Other depositors	79%
Household savings	21%

Source: NBS.

Banking sector survival period in case of sudden deposit withdrawal

The period in which we observe the effects of a strong shock is defined as the survival period, and it consists of two stages. The first is a short period of high-intensity stress, lasting for several days. During that time evaluation is made of the bank's ability to cover liquidity outflows amid reduced possibility of obtaining new liquidity and changing the business model. The second stage is a longer period, marked by weaker but more persistent shocks, lasting for over a month.

This group of liquidity tests aims to determine the longest period of banking sector survival in case of large daily deposit withdrawals – in the stage of a short and strong liquidity shock. The main withdrawal assumptions for the moderate and worst-case scenarios are presented in Table II.2.5.

Table II.2.5 **Assumed daily deposit withdrawal**

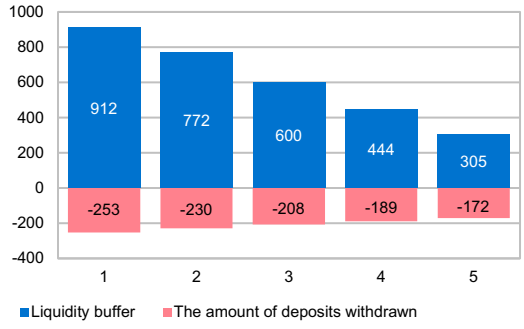
DEPOSIT WITHDRAWAL	Moderate scenario	Worst case scenario
Demand deposits - daily	10%	15%
Time deposits - daily	2%	5%
Availability of liquid assets - daily	95%	95%
Availability of non-liquid assets - daily	1%	1%

Source: NBS.

[74] In order to assess a bank's resilience over a longer term (one year), the introduction of the Net Stable Funding Ratio (NSFR) has been envisaged.

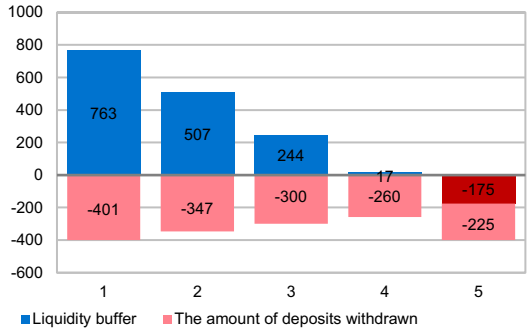
[75] The lender of last resort function is a standard function of central banks and is commonly defined as the readiness of the central bank to extend loans to banks that cannot access more favourable sources of liquidity available in the market, all with a view to protecting depositors and/or preventing a systemic crisis in the financial system.

Chart II.2.7 **Liquidity buffer – daily for moderate scenario***
(RSD bn)



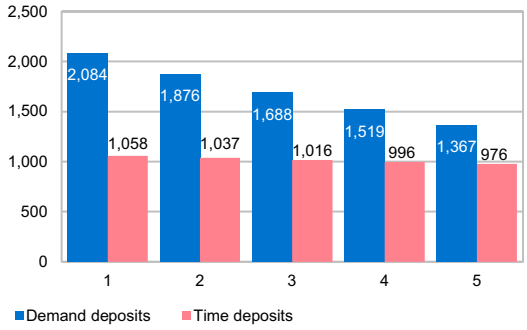
* NBS estimate.
Source: NBS.

Chart II.2.8 **Liquidity buffer – daily for worst case scenario***
(RSD bn)



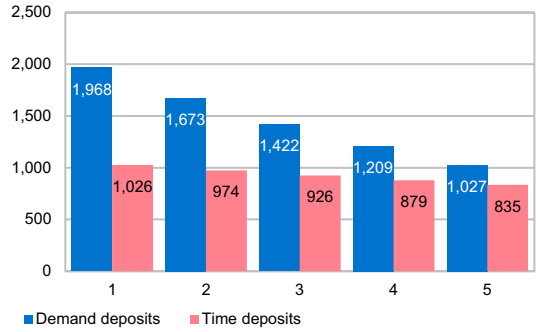
* NBS estimate.
Source: NBS.

Chart II.2.9 **Structure of demand and time deposits – daily for moderate scenario***
(RSD bn)



* NBS estimate.
Source: NBS.

Chart II.2.10 **Structure of demand and time deposits – daily for worst case scenario***
(RSD bn)



* NBS estimate.
Source: NBS.

Charts II.2.7 and II.2.8 show available liquid assets and the amount of deposits withdrawn at banking sector level in the first five days (the amount of liquid assets remaining after liquidity needs are satisfied) for both scenarios. Charts II.2.9 and II.2.10 give the deposit structure by day.

According to the results of liquidity stress tests as at 31 December 2020, the entire banking sector can withstand eight business days[76] in the conditions of daily deposit withdrawal in the moderate scenario or five business days in the worst-case scenario.

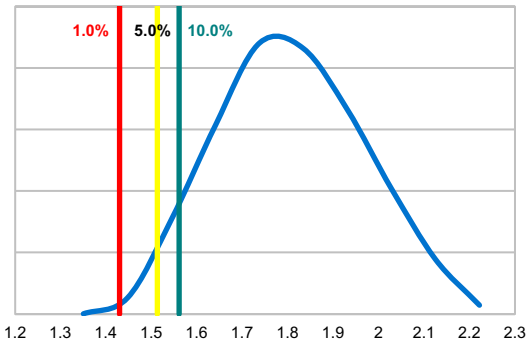
Simulations of the liquidity shock

This analysis aims to determine the probability of movement in banking sector liquidity ratios under assumed negative effects, i.e. various randomly selected values of deposit withdrawals.

The liquidity ratios are obtained based on tens of thousands of different scenarios, which imply the statistical sampling of the assumptions of deposit withdrawal by sector, from zero to the worst-case scenario value (Table II.2.4). Since only assumption values with a negative effect are observed, the tentative values of the variable under assumed negative effects are calculated. This enables an efficient modelling of a large number of simulations of low-probability of Serbia's banking sector liquidity shocks for test purposes.

[76] The IMF's recommendation about bank survival period after deposit withdrawal is a period of five business days. After this period, it is believed that a bank will have sufficient time to consolidate its operations.

Chart II.2.11 **Confidence intervals for banking sector liquidity ratio***



* NBS estimate.
Source: NBS.

These simulations produced a distribution of liquidity ratios of the banking sector at various combinations of assumptions (Chart II.2.11).

With the given confidence interval of 10%, the liquidity ratio equals 1.56, while for confidence intervals of 5% and 1%, it equals 1.51 and 1.43, respectively.

In other words, it can be asserted with a 90% certainty that the liquidity ratio will not fall below 1.56 in various combinations of deposit withdrawal assumptions. Moreover, there is a certainty of 99% that the ratio will not fall below 1.43.

Network modelling in the assessment of banking sector systemic risk

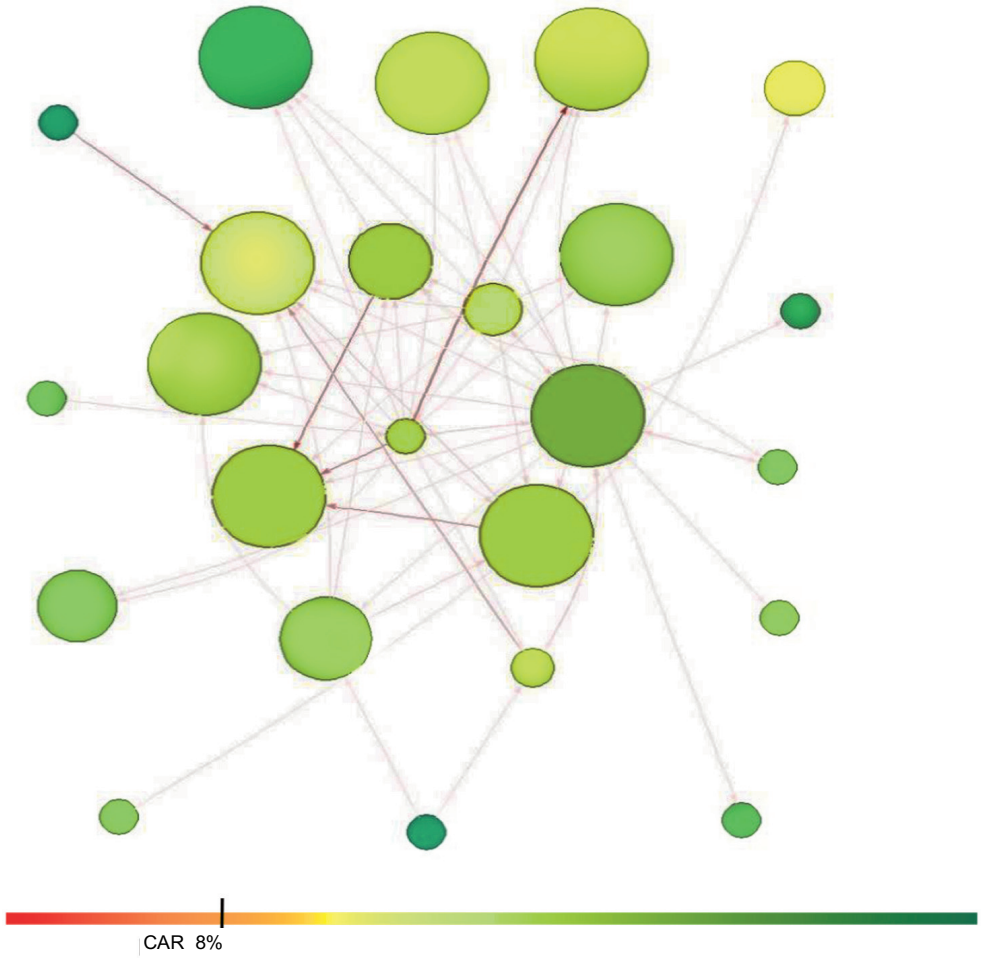
The 2008 financial crisis revealed the importance of observing the interdependencies among financial institutions for the purpose of determining the systemic component of risk. In terms of the systemic risk, it is important to determine which financial institutions are systemically important, whether the existing structure of interconnectedness is conducive to the transmission of the shock through the system, and above all, to what extent the entire system is resilient to potential shocks. Therefore, the financial system cannot be observed only from the aspect of a single institution; rather, information on the interinstitutional dependencies must be included as well.

The network structure describes the domestic banking sector in the context of mutual on- and off-balance sheet exposure of banks. The edge weight from bank i to bank *j* represents the potential increase in allowances for loan impairment relative to the regulatory capital of bank *i*, in case of insolvency of bank *j*. The network of Serbia's banking sector, in accordance with the given definition, is presented in Chart II.2.12. The intensity of the edge colour indicates its weight – the greater the weight, the more intense its colour. The edge direction is determined as follows: the edge from node *i* to node *j* relates to potential growth in allowances for impairment relative to the regulatory capital of bank *i* in case of a decrease in the solvency of bank *j*. The size of the circle that represents the bank shows the amount of its regulatory capital – the greater the circle, the higher the amount of regulatory capital. The circle colour indicates the level of CAR. In the spectrum from red to green, red corresponds to the minimum observed CAR of 0%, while green corresponds to the maximum observed CAR of 36%. Values above 36% are considered exceptionally high and are therefore not taken into account when forming the scale of CAR.

Global efficiency indicates the banking sector's network capacity in terms of shock transmission and equals 0.17. As global efficiency ranges between 0 and 1, where values close to 1 indicate high conductivity of shocks through the network, a global efficiency of 0.17 does not indicate a high network potential for shock transmission.

The impact of the network structure on shock transmission is simulated as follows: assuming the insolvency of a pre-determined bank, the expected increase in allowances for loan impairment is calculated for each bank in the system. An increase in allowances for impairment results in a lower CAR, already in the first iteration of shock transmission. In each following iteration, based on the CAR values obtained in the previous iteration, new probabilities of default were obtained for each bank in the system (which did not become undercapitalised up to that point). Based on this, the expected increase in allowances for impairment and a new reduction in risk-weighted assets, capital and the CAR were calculated again. A shock is considered to be neutralised when further iterations register no change in the regulatory capital and risk-weighted assets of any of the banks. Assuming the insolvency of an individual bank and the transmission of a particular shock through

Chart II.2.12 **Banking network of the Republic of Serbia**



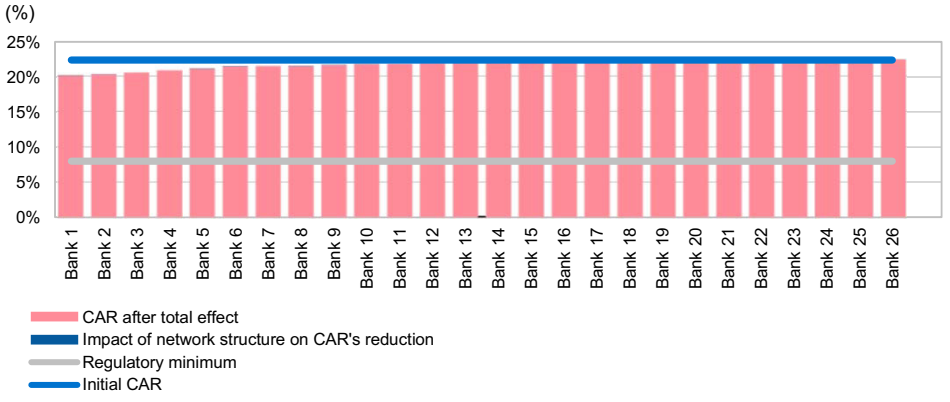
Source: NBS.

the system, as was explained, the effect on each individual bank, and therefore on the system, originates from two different sources. One relates to the initial iteration following the insolvency of a pre-determined bank – to its elimination from the system and the immediate impact on banks exposed to it. The other relates to shock transmission in the following iterations, i.e. the domino effect, which measures the impact of the structure of the banking sector network on the transmission of insolvency through the system.

Chart II.2.13 shows the banking sector's CAR immediately after the assumed insolvency of each individual bank in the sector and the total effect of the existence of the network structure. Chart II.2.14 shows the impact of the network structure on shock transmission, reflected in a reduction in the CAR of individual banks and/or sector, in all iterations following the first one.

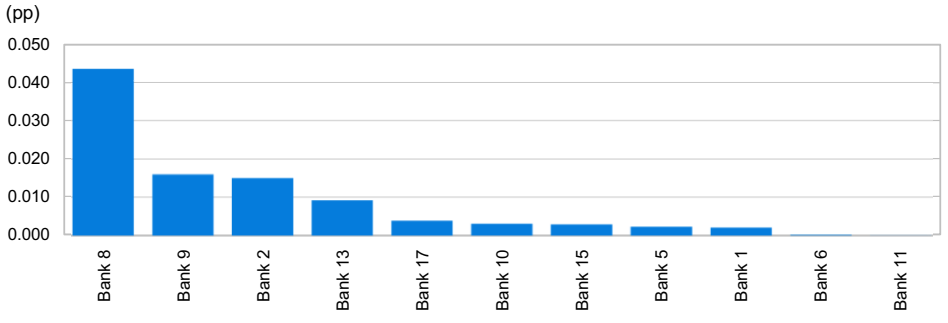
The results shown in Charts II.2.13 and II.2.14 indicate that, in case of insolvency of any bank, the banking sector's CAR would stay in the safe zone, i.e. above the regulatory minimum. Also, the impact of the network structure on shock transmission is relatively weak, which is conducive to the maintenance of financial stability.

Chart II.2.13 **Banking sector CAR after the insolvency of an individual bank**



Source: NBS.

Chart II.2.14 **Impact of network structure on the CAR's reduction after the insolvency of an individual bank**



Source: NBS.

Conclusion

The Serbian banking sector has remained highly resilient to the assumed shocks, including the most severe ones amid the global pandemic in 2020. Systemic risks in the banking sector must be continuously monitored in order to further strengthen the financial stability function, protect depositors and enhance consumer confidence in the banking system.

The regulatory capital adequacy ratio of the banking sector would remain above the regulatory minimum even in the worst-case scenario.

The banking sector would stay liquid even in conditions of the largest assumed deposit outflow. Under the assumed worst-case scenario, a certain number of banks could enter the zone of liquidity risk. However, in case the assumed scenarios materialise, the NBS has the instruments to ensure additional liquidity. The application of Basel III standards implies new regulatory requirements in terms of liquidity risk management and minimum liquidity ratios for banks. These regulatory requirements function as both micro and macroprudential instruments that are used to prevent the occurrence of or increase in the maturity mismatch between the sources of funding and financial institutions' investment.

As the interconnectedness of financial institutions in the banking sector may lead to a contagion or shock transmission, it is of particular importance to assess the connection among banks and the potential systemic risk arising therefrom. The results of the network modelling indicate that there is no significant systemic risk component in the Serbian banking sector.

Now that exceptional results have been achieved in the resolution of existing NPLs, priority in the future period should be the prevention and curbing of new NPLs, especially by strengthening the risk management function in banks and further improving macroeconomic stability.

Thanks to the NPL Resolution Strategy, adopted in August 2015, and the implementation of the resulting activities and regulatory measures of the NBS, as well as the NPL Resolution Programme for the Period 2018–

2020 which included further activities to downsize NPLs, at end-December 2020 the NPL ratio equalled 3.7%, which is 0.4 pp lower than at end-2019, while allowances for impairment, calculated in line with international accounting standards, account for 59.0% of NPLs. NPLs are currently low and, given the high capitalisation of the banking sector and high coverage of NPLs, they do not pose a threat to financial stability. On the other hand, it is necessary to monitor further potential growth in NPLs as a materialisation of credit risk in the conditions triggered by the coronavirus pandemic.

As part of its activities, the NBS is considering the development of an analytical framework for analysing the effects of climate changes on financial stability. The response to the risks resulting from climate change must be well-measured, given the uncertainty regarding the time and manner in which these risks will play out and the size of direct and indirect damage they may cause. It is of key importance to recognise the broadest possible scope of the risks (both physical and transitional) and the channels of their impact on some sectors of the economy, geographical regions, population categories, etc. and, ultimately on GDP and financial system stability. Once risks and channels are recognised, it is possible to embark on a scenario analysis which would help quantify some effects and identify areas where certain fiscal, monetary and macroprudential policy measures could produce effect.

In the prior period, the NBS acted proactively and took numerous measures to mitigate the effects of the coronavirus pandemic on the financial system and to support lending and economic activity.

Text box 4: Transition towards a green economy

Global initiatives

No longer a mere future threat, climate change is already triggering new types of risks to the financial system, two of which being differentiated from the central bank perspective. The first type are physical risks (natural disasters caused by adverse weather conditions, which may have negative effects on household and corporate assets) and the second are transitional risks (tightening of regulatory requirements for certain technological processes, e.g. taxes imposed with a view to reducing CO_2 emissions could lead to lower asset valuation, due to unplanned re-evaluation).[77]

The Paris Agreement in the part of the United Nations Framework Convention on Climate Change (UNFCCC) was signed in 2016 in order to limit global warming. The central goal of the Paris Agreement is to strengthen global response to the climate change threat and raise countries' ability to fight climate change impact. In the absence of appropriate activities and policies, the average global temperature would rise by around 2°C by the end of this century, entailing dramatic effects on the natural environment and ecosystem, and by extension, also on economic activity. The Paris Agreement envisages limiting the rise in the average global temperature to well below 2, preferably to 1.5°C, compared to pre-industrial levels. Among other things, in order to further joint efforts in combating climate change effects, central banks and supervisors established a Network of Central Banks and Supervisors for Greening the Financial System (NGFS) at One Planet Summit in Paris, in December 2017.

In addition, in 2020 the BIS and Banque de France made a strategic report – *The Green Swan*, about the impact of global warming and potential central bank response from the financial stability perspective. Traditional backward-looking risk assessments do not offer an adequate, comprehensive and accurate assessment of climate change risks, so this report brings together all potential causes that may disturb normal functioning of the financial system from the aspect of climate change. The 26th UN Climate Change Conference will take place in Glasgow in 2021.[79]

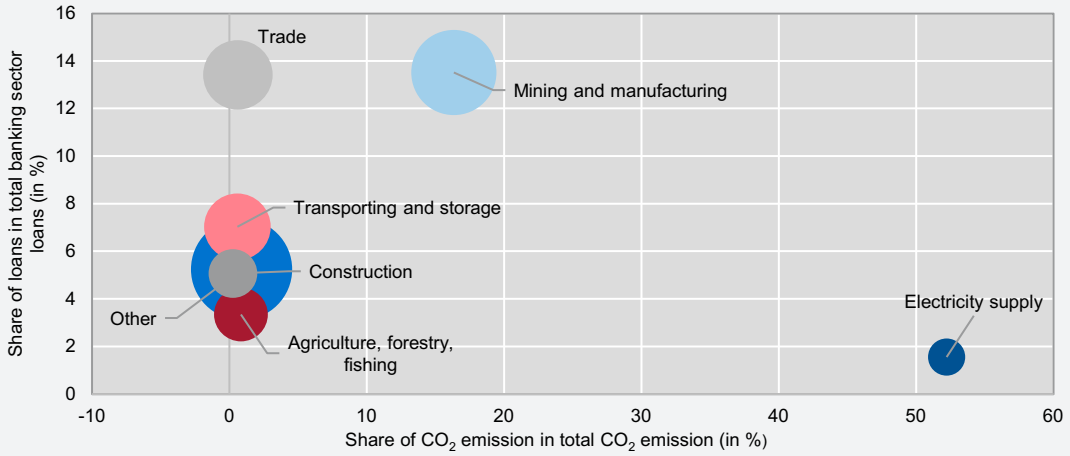
Climate-related risks and the banking sector in Serbia

By their nature, climate-related risks may be considered systemic risks and as such, be analysed from the financial stability perspective. The banking sector is exposed to physical and transitional climate-related risks indirectly, via corporate and household loans. The impact of climate-related risks on the banking sector is twofold. On the one hand, climate-related risks materialise through the impact on client credit quality, i.e. on the value of banks' assets and, on the other hand, through the impact on the value of the received collateral. The analysis of climate-related risks is an extremely challenging area, taking into account that it deals with dynamic, insufficiently investigated links and impacts. Industries with the greatest CO_2 emission intensity[80] in Serbia are electricity, gas, steam and air conditioning supply – with 0.14 kg/RSD emission intensity, followed by mining with 0.02 kg/RSD and manufacturing with 0.01 kg/RSD. The chart below shows the sectoral distribution of CO_2 emission as it affects the banking sector via loans and as it reflects on the real economy via gross value added.

Companies operating in the most carbon intensive sectors[81] produce 24% of gross value added and account for around 15% of total banking sector loans. The largest CO_2 emission is generated by the electricity supply sector, and next come mining and manufacturing. Electricity supply, as the most intensive CO_2 emitter, generates a small share of gross value added, and banks' exposure to this sector is low, which minimises the effects of this sector on the economy and the banking sector in case of transition towards a green economy. Mining and manufacturing are in a different position.

[77] More information about climate changes as a challenge to financial stability can be found in the *Annual Financial Stability Report - 2018*, Text box 2.
[78] https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement
[79] https://ukcop26.org/
[80] Intensity of CO_2 emission is the ratio of CO_2 emission and gross value added of a particular sector, expressed in kilograms of CO2 per one dinar of gross value added.
[81] Intensity of CO_2 emission is the ratio of CO_2 emission and gross value added of a particular sector.

Chart O.4.1 **Banks' corporate loans by sector relative to CO_2 emission and gross value added**



Notes: Circle size is proportionate to the gross value added of the appropriate sector. The sector *Mining and manufacturing* includes sectors B, C and E: mining, manufacturing, water supply, sewerage, waste managment and remediation activities. *Electricity supply* includes electricity, gas, steam and air conditioning supply. *Transporting and storage* includes transporting and storage, accommodation and food service activities, information and communication. The category *Other* covers real estate activities, professional, scientific, innovation and technical activities, administrative and support service activities, arts, entertainment and recreation, other services activities, education, health and social work activities.

We used the latest available data on CO_2 emission by sector, pertaining to 2014.

Sources: SORS, NBS.

These sectors generate around 20% of gross value added, which exposes them to high transition risk. Given that around 14% of domestic banks' loans are placed in mining and manufacturing industry, these sectors are of key importance in banks' risk profiling in terms of climate change risk in the context of transition towards a green economy.

Transition towards a green economy – initiatives in Serbia

Due to its geographic position, Serbia is exposed to climate change and ecological risks such are earthquakes and floods. Also, the rising trend of the average annual temperature in Serbia runs above the global trend, which has been especially pronounced after 1980. The ratification of the Paris Agreement was one of the first steps taken to mitigate negative risks, whereby our country assumed the obligation to contribute to cutting down greenhouse gas emissions. Also, some commercial banks in Serbia created specific financial products to promote energy efficiency.

Supported by credit lines of the European Bank for Reconstruction and Development (EBRD), within the second phase of the project Western Balkans Sustainable Energy Financing Facility, companies and municipalities in Serbia may take special purpose loans for ecological-technological solutions, in cooperation with domestic partner banks. Among other things, the Renewable Energy Sources of Serbia Association was founded on 1 March 2021, with the EBRD support, with a view to contributing to the improvement of the business environment in the field of renewable energy sources, the transition from fossil fuels to renewable energy sources, raising awareness of the importance of green energy and environmental protection, the creation of green jobs, the decarbonization of Serbia and the global fight against climate change.

A more recent example of support to ecologically sustainable development is considering the issuance of green bonds, for the purpose of implementing and financing certain projects in the area of environment protection. In mid-March 2021, the draft Law on Climate Change[82] was first presented to the Serbian National Assembly, only to be officially adopted on 18 March of the same year, which placed Serbia among the first Western Balkan countries to develop important strategic documents such as the low carbon development strategy, action plan for strategy implementation and climate change

[82] RS Official Gazette, No 26/2021.

adaptation programme. The implementation of the above law will contribute to improvement of environmental conditions, better air quality, population health and, consequently, drive economic growth and development and economy competitiveness.

In order to raise awareness among the wider public about the negative effects of climate changes and implement policies aimed at reducing and managing climate risks, it is necessary to ensure a smooth transition towards a sustainable economy and cooperation of all relevant institutions – public and private. That way, the central bank also contributes to fight against climate change, by promoting sustainable financing in the financial sector.

II.3 Non-bank financial sector

II.3.1 (Re)insurance undertakings

In the period when the world is facing the consequences of the coronavirus pandemic, the role of the insurance sector gains in importance. Despite the inevitable impact of the pandemic-induced crisis, in 2020 the Serbian insurance sector recorded positive results. It was adequately capitalised and profitable, posting growth in total premium. (Re)insurance undertakings recorded an increase in their balance sheet total, and the sector's share in the balance sheet total of the financial sector remained almost the same as a year earlier. Non-life insurance maintained a dominant share in the total premium. Still, major changes in the insurance supervision regulatory framework are yet to be seen with the full alignment of regulations with the Insurance Distribution Directive (IDD) and implementation of Solvency II.

At end-2020, the balance sheet total of the insurance sector had a somewhat lower share (6.0%) in the balance sheet total of the financial sector supervised by the NBS (banks, financial lessors, (re)insurance undertakings and VPFs),[83] relative to end-2019 (6.6%). After the banking sector, insurance is the second most important segment of the Serbian financial system.

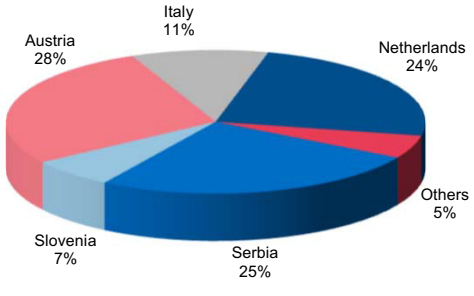
At end-2020, there were 16 insurance and four reinsurance undertakings operating in Serbia.[84] Among insurance undertakings, four were engaged in life insurance, six in non-life, and six provided both life and non-life insurance services. Of the total number of undertakings, 15 were in majority foreign ownership. Major foreign owners are from Austria (around 28%) and the Netherlands (around 24%). Insurance undertakings in majority domestic ownership account for around 25% of all insurance undertakings[85] (Chart II.3.1).

Apart from insurance undertakings, the sales network also included 17 banks, six financial lessors, and one public postal operator, all of them holding approval to carry on insurance agency activities, as well as 101 legal persons (undertakings for insurance brokerage and insurance agency activities), and 77 insurance agents (natural persons – entrepreneurs).[86]

Compared with both EU member states and the neighbouring countries, Serbia's insurance sector is still underdeveloped, with potential for further growth. In 2019,[87] the penetration ratio (gross written premium as a percentage of GDP) at the EU level stood at 6.8%,[88] according to data of the Swiss Re Institute, while the same ratio in Serbia measured 2.0%.[89] Also, Serbia's density ratio (the average premium per capita spent on insurance) of USD 147[90] was much lower than the EU's USD 2,374[91] in 2019[92] (Chart II.3.2).

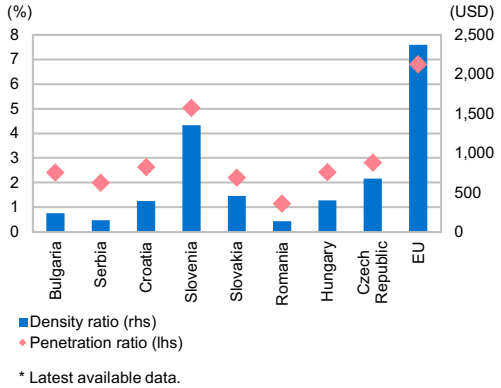
A positive trend was also recorded in the total premium, which reached RSD 109.9 bn in 2020, having risen by around RSD 2.5 bn from 2019. Serbia still lags behind the

Chart II.3.1 **Insurance undertakings* ownership structure, as at 31 December 2020**



* Does not include reinsurance undertakings.
Source: NBS.

Chart II.3.2 **Insurance sector development indicators as at 31 December 2019***



* Latest available data.
Sources: Swiss RE and NBS.

[83] Excluding payment institutions and e-money institutions.
[84] https://www.nbs.rs/internet/english/60/60_1/index.html
[85] Excluding reinsurance undertakings.
[86] https://www.nbs.rs/internet/english/60/60_1/index.html
[87] Latest available data.

[88] Source: Swiss Re Sigma 4/2020.
[89, 92] Source: NBS.
[90] Latest available data.
[91] Source: Swiss Re Sigma 4/2020.

neighbouring countries in terms of the absolute amount of the total premium (Chart II.3.3).

Owing to a faster growth in life than in non-life insurance premium, the share of the life insurance premium in total premium increased slightly, from 23.3% in 2019 to 23.8% in 2020 (Chart II.3.4).

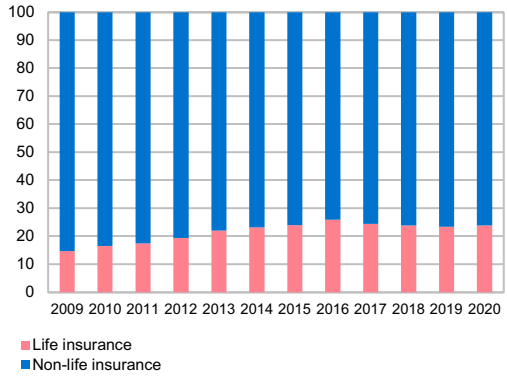
Within the total premium, motor third party liability insurance was still dominant (32.8%), followed by life insurance (23.8%), property insurance (18.9%) and full-coverage motor vehicle insurance (10%) (Chart II.3.5).

The Serbian insurance sector is adequately capitalised, given the risks to which it is exposed. According to the Insurance Law, the available solvency margin (guarantee reserve) must be at the level of at least the required solvency margin (core CAR). Given that in 2020 the core CAR was 228.8% for non-life and 249.4% for life insurance, it can be concluded that the capital adequacy of Serbian insurers was high.

The leverage ratio (capital to asset ratio) reflects the level of exposure of insurers' capital to risks. At end-2020, this ratio rose slightly in undertakings engaged mainly in non-life insurance and measured 25.3% (24.9% in 2019), and in undertakings carrying out life insurance it dropped slightly to 23.3% (23.6% in 2019).

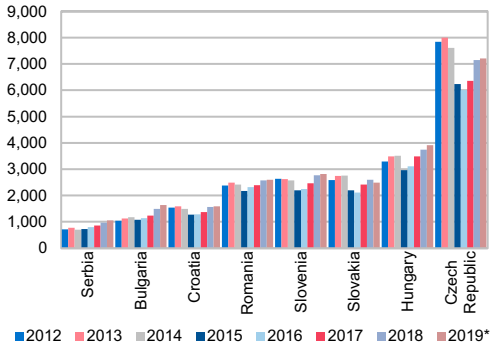
For an undertaking to be able to protect the interests of the insured and injured third parties, i.e to timely settle claims, it must create an adequate amount of technical provisions and invest them in such a way as to ensure that their real value is maintained and increased so that the undertaken insurance obligations may be fully and timely met. To be able to settle its liabilities, an undertaking must invest its assets taking due account of the risk profile and risk tolerance limits by pursuing its investment policy. Technical provisions must be invested into the prescribed types of assets. At end-2020, technical provisions of all (re)insurance undertakings stood at RSD 208.3 bn, up by 2.8% in nominal terms relative to end-2019 (RSD 202.5 bn). Mathematical reserves kept their dominant share in technical provisions, recording a growth rate of 6.7% at end-2020. After years of continuous growth, interrupted at end-Q1 and Q2 2020 due to the settling of a large property damage, technical provisions continued up.

Chart II.3.4 **Insurance premium structure**
(%)



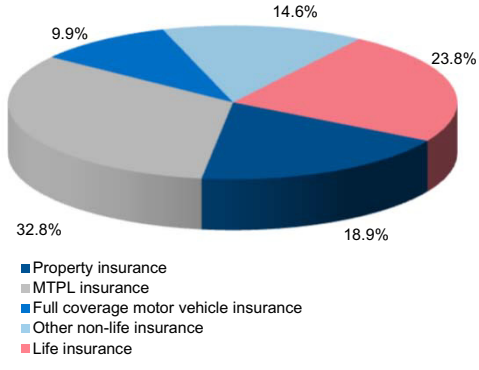
Source: NBS.

Chart II.3.3 **Total insurance premium**
(USD mn)



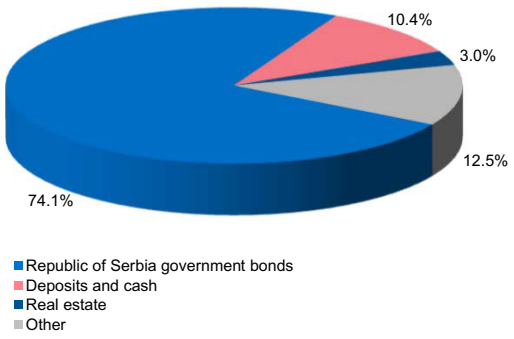
* Latest available data.
Sources: Swiss RE and NBS.

Chart II.3.5 **Total premium according to types of insurance as at 31 December 2020**



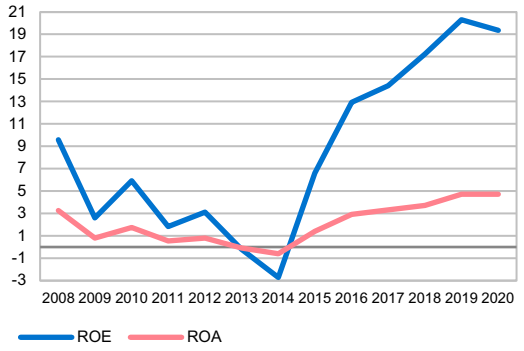
Source: NBS.

Chart II.3.6 **Non-life insurance technical provisions coverage as at 31 December 2020**



Source: NBS.

Chart II.3.8 **Profitability ratios of non-life insurance undertakings**
(%)



Source: NBS.

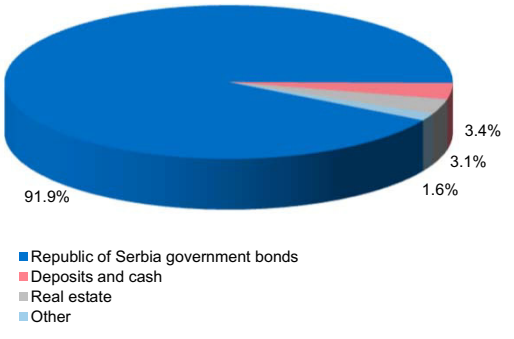
As shown in Chart II.3.6, the bulk of technical provisions of non-life insurance was invested in government securities (74.1% at end-2020). Technical provisions of life insurance were also predominantly invested in government securities (91.9% at end-2020) (Chart II.3.7).

The liquidity of insurance undertakings is an important factor in assessing the quality of assets. Apart from liquid assets, insurance undertakings also invest in instruments of limited liquidity, such as intangible assets, real estate, non-tradable securities and receivables. Over the past years there has been a notable decline in the indicator of less tradable assets (share of less liquid assets in total assets). In undertakings mainly engaged in non-life insurance, this indicator equalled 16.3% in 2020, a tad lower than in 2019 (16.7%). The indicator also declined slightly in undertakings mainly engaged in life insurance – to 5.6% (6.1% at end-2019).

The insurance sector ended 2020 with a positive after tax net result[93] amounting to RSD 12.9 bn. Return on equity in undertakings mainly engaged in non-life insurance was 19.4% in 2020 (20.3% in 2019) and return on assets 4.7% (4.7% in 2019), as shown in Chart II.3.8. Undertakings engaged mainly in life insurance saw an increase in their profitability indicators in 2020. Their return on equity was 9.1% (7.3% in 2019) and return on assets 2.1% (1.6% in 2019), as can be seen in Chart II.3.9.

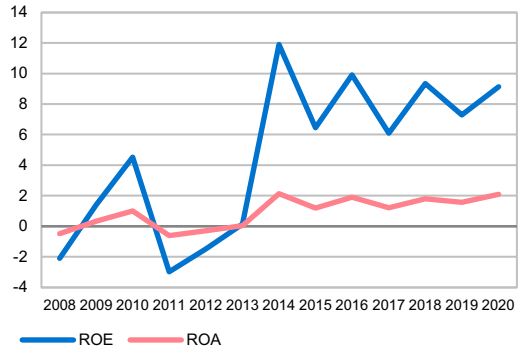
The profitability of insurance undertakings is indicated by the combined ratio.[94] The ratio value below 100% indicates that an undertaking is able to pay out claims and

Chart II.3.7 **Life insurance technical provisions coverage as at 31 December 2020**



Source: NBS.

Chart II.3.9 **Profitability ratios of life insurance undertakings**
(%)

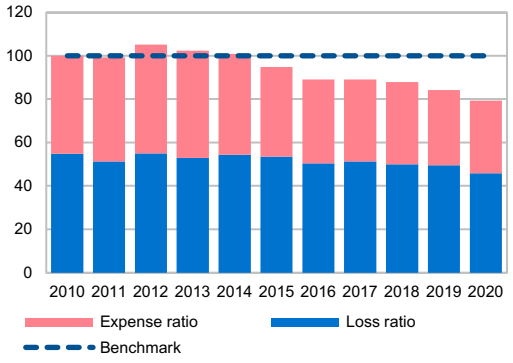


Source: NBS.

[93] Includes only tax expenses which (re)insurance undertakings disclosed by the time data were submitted to the NBS.

[94] Self-retention is the portion of contractual risks that the insurance undertaking always carries under its own cover and that it can cover from its own funds.

Chart II.3.10 **Combined insurance ratio**
(%)



Source: NBS.

cover expenses from the collected premiums. If the ratio value is above 100%, it is assumed that an insurer determines the level of the premium by taking into account the potential investment income from the financial and real estate markets, which makes it vulnerable to additional market risks. In undertakings predominantly engaged in non-life insurance, the combined ratio dropped from 84.2% at end-2019 to 79.3% at end-2020 (Chart II.3.10). The improvement in the combined ratio resulted from the growth of premium earned and the decline in net claims and insurance administration expenses.

The expense ratio (ratio of insurance administration expenses to premium earned) declined from 34.8% at end-2019 to 33.6% at end-2020, which suggests improved efficiency of the insurance administration process. The loss ratio (the ratio of losses incurred in claims to premium earned) indicates the adequacy of the price policy of insurance undertakings. It is a measure of an undertaking's ability to cover claims from the premium income. A low value of this ratio suggests an undertaking's bolstered ability to meet claim liabilities. This value decreased in 2020, to 45.8%, from 49.5% at end-2019.

In 2020, the NBS adopted the Decision Amending the Decision on the System of Governance in an Insurance/Reinsurance Undertaking (RS Official Gazette, No 84/2020). This Decision supplemented the policy of reimbursements, wages and other income in order to ensure an adequate and transparent policy of reimbursements, wages and other income of insurance employees. The undertaking's policy on reimbursements, wages and other income encourages prudent and cautious risk assumption taking into account internal organisation of the undertaking, as well as nature, scope and complexity of all types of risks to which it is or may be exposed on account of certain activities.

The NBS also adopted the Decision Amending the Decision on Investment of Insurance Funds (RS Official Gazette, No 149/2020). This amendment extended the deadline from 31 December 2020 to 31 December 2022, until which the type of assets relating to unearned premium receivables under non-life insurance, coinsurance and retrocession may be acquired using technical provisions up to 10% of their amount. Regulations adopted under the Accounting Law were amended in July 2020, by adopting the following decisions, published in the RS Official Gazette, No 93/2020: the Decision on the Chart of Accounts and Content of Accounts in the Chart of Accounts for Insurance Undertakings, Decision on the Content and Layout of Financial Statement Forms for Insurance Undertakings, and Decision on the Layout and Content of Statistical Report for Insurance Undertakings. These regulations will apply starting with the financial reports compiled as at 31 December 2021.

Starting from its legal obligation to supervise the insurance market in order to protect the rights and interests of the insured and other insurance beneficiaries, on the one hand, and to strengthen financial system stability, on the other, in 2020, the NBS adopted the Decision Amending the Decision on the Basic Criteria of the Bonus-Malus[95] System, Data Required for Its Application, and Maximum Bonus (RS Official Gazette, No 84/2020). This amendment to the Decision increases the bonus level (i.e. MTPL insurance premium level) for the insured in premium levels 1 and 2.

The current insurance regulations in the Republic of Serbia have laid the legislative groundwork for further convergence of the Serbian insurance sector to that of the EU. Still, major changes in the insurance supervision are yet to be made, both when it comes to full alignment with the Insurance Distribution Directive (IDD) and implementation of Solvency II.

In conditions when the whole world is facing the consequences of the coronavirus pandemic, such as a sudden contraction in economic activity and a rise in

[95] Bonus-malus system refers to determining the level of MTPL insurance premium for a specific vehicle by applying a premium scale which takes into account claims for damages for which the policyholder was responsible in the prior period.

unemployment, the role of the insurance sector in providing protection to citizens and insured persons and ensuring continuity in the provision of insurance services, increasingly gains in importance. The NBS recommended to insurance undertakings to enable their users to defer payment of due instalments of insurance premiums in a way that will not diminish their rights arising from concluded contracts. Therefore, the NBS took all the necessary measures to prevent, mitigate and eliminate the negative effects caused by the coronavirus pandemic with a view to protecting the rights and interests of insurance service users, maintaining the stability of operations of all professional insurance market participants, i.e. improving the supervisory function of this market segment.

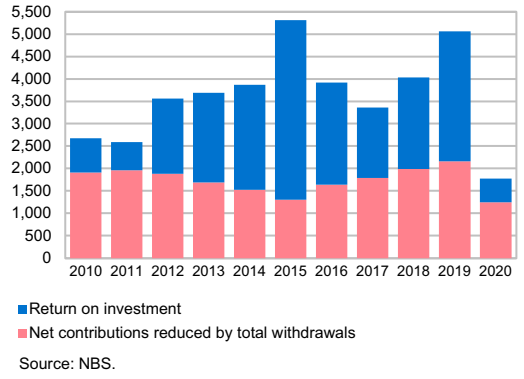
II.3.2 Voluntary pension funds

The crisis caused by the coronavirus contagion reflected on the results of the Serbian VPF sector in 2020. Net VPF assets in Serbia continued to rise, but return on investment, which amounted to around RSD 530 mn, declined by 82% relative to the year before. Total contributions to VPFs amounted to RSD 3.5 bn, recording for the first time since 2015 a lower level relative to the year before.

VPFs are collective investment institutions that collect pension contributions and invest them into various types of assets in order to generate private pensions, i.e. they represent long-term saving for old age. These funds are based on the defined contribution principle, where future benefits are not defined in advance and depend on the amount of contributions paid, level of fees, the return on invested VPF assets, and the length of the accumulation phase. VPFs are managed by management companies, which engage in setting up and managing of VPFs as their sole activity. Founders of management companies are insurance undertakings and commercial banks. VPF assets are separated from the assets of a management company and are kept in accounts with custody banks.[96]

The number of management companies and VPFs did not change in 2020 – at the end of the year there were four management companies in Serbia, in charge of managing the assets of seven VPFs. The assets of all VPFs are kept in accounts with a single custody bank.

Chart II.3.11 **Annual increase in net VPF assets and net contributions**
(RSD mn)



Source: NBS.

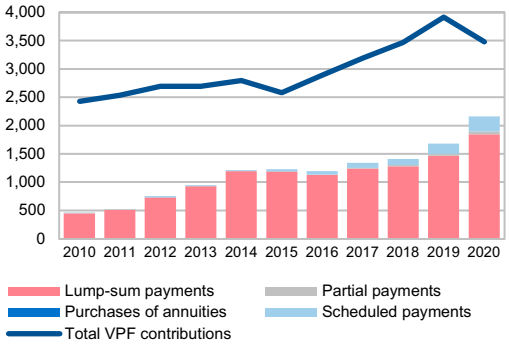
From the start of operation of VPFs in Serbia (2006), their total net assets have constantly been increasing. At end-2020, net assets came at slightly more than RSD 47 bn, rising by 3.9% from end-2019. Changes in the value of net fund assets depend on members' contributions, collected fees, withdrawals of accumulated funds and return on VPF investment (Chart II.3.11). Net contributions (minus total withdrawals) were the main drivers of the rise in net VPF assets in 2020. Net VPF assets went up by RSD 1.8 bn, while return on investment was significantly lower than the year before (82%) due to the consequences of the coronavirus pandemic, and equalled RSD 530 mn. Given the structure of VPF investment, the return is influenced by: the change in the yield curve on government debt instruments,[97] change in the value of shares, level of the NBS key policy rate and banks' interest rates, and changes in the dinar exchange rate against the euro and the dollar.

Total contributions in 2020 amounted to RSD 3.5 bn (RSD 3.9 bn in 2019), and total withdrawals to RSD 2.2 bn (RSD 1.7 bn in 2019) (Chart II.3.12). The structure of withdrawals was unfavourable, i.e. not in line with the objective of saving in VPFs which assumes the use of accumulated assets over a longer period. Though lower by 2.1 pp than in the previous year, more than 85% of total withdrawals in 2020 were lump sum withdrawals, which are usually made as soon as the member reaches the age limit for the withdrawal of accumulated funds. On the other hand, with the lengthening of accumulation periods and growth of the accumulated sums, an increase

[96] A bank that keeps a VPF's account, performs other custody services on behalf of the VPF and acts upon the VPF management company's orders in compliance with the Law on Voluntary Pension Funds and Pension Schemes.

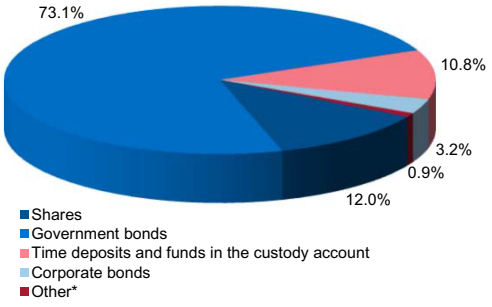
[97] A decline in interest rate leads to an increase in the prices of debt instruments and vice versa. The prices of longer-maturity instruments are more sensitive to interest rate changes.

Chart II.3.12 **Annual VPF contributions and withdrawals**
(RSD mn)



Source: NBS.

Chart II.3.13 **Structure of VPF assets as at 31 December 2020**



* Including investment units of open-end investment funds and other receivables.
Source: NBS.

in scheduled and other types of withdrawals can be expected as well.

The total number of VPF users went up by 3,382 from the previous year, to 204,969 at end-2020. These users concluded a total of 279,495 contracts on membership. During the same period, the number of active users (users that regularly pay VPF contributions) increased, but their share in the total number of users in the accumulation stage stayed relatively low, at 35.3% in December 2020 (34.4% in December 2019). The average age of VPF users in Serbia is around 47 years, with users aged 40–60 making up the dominant share of around 62%. The percentage of users above the age of 53 was similar as in prior years, accounting for 29.7%. The share of VPF users in the total number of employees is 9.5%, which indicates that this sector is still underdeveloped, as well as that there is plenty of potential for its future development.

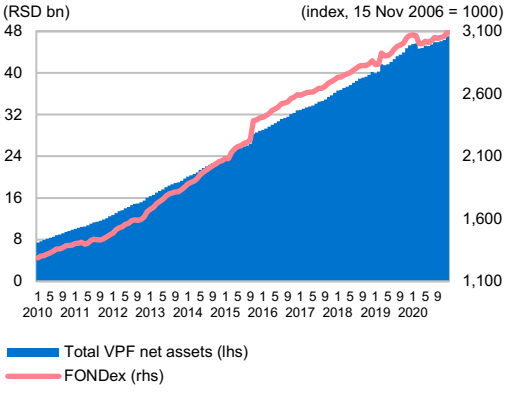
At end-2020 most assets of VPFs were again invested in government bonds of the Republic of Serbia (73.1%), as can be seen in Chart II.3.13. One should bear in mind that the high concentration of investment makes VPFs sensitive to market risks, primarily to interest rate risk and reinvestment risk, given that the current low interest rate environment negatively impacts the future yields of VPFs. It is therefore necessary to further develop the domestic capital market, as well as new long-term financial instruments, which will enable more diverse investment and thereby mitigate the said risks.

The portion of shares in total VPF assets increased negligibly (from 11.1% in 2019 to 12% in 2020). Term deposits with banks and balances held in custody accounts made up 10.8% of total assets at the end of the year. The funds were also invested in corporate bonds (3.2%), investment funds (0.5%) and T-bills (0.4%).

At end-2020, 14.5% of total VPF assets were in euros (EUR 6.8 bn) and 85.5% in dinars (RSD 40.3 bn).

At end-2020, FONDex[98] reached the value of 3,094.52 points (Chart II.3.14), which is 29.66 points higher than a year earlier. Annual FONDex return, which represents the weighted average return of all funds, equalled 1.0% in 2020, significantly lower than last year (7.1%), but also lower than FONDex return since the start of VPF operations (8.3% at end-2020).

Chart II.3.14 **Total net VPF assets and FONDex**



Source: NBS.

[98] FONDex indicates movements in investment units of all VPFs in the market. The initial FONDex value on the first business day of the first VPF, 15 November 2006, was 1,000.

Fees charged by management companies include contribution fees and management fees. Though the contribution fee is front loaded, it is not the greatest cost for the members. The management fee is calculated daily and it made up 88% of total charged fees in 2020. Such structure of fees resulted from the increase in the net fund asset value and an increasingly higher base against which the management fee is charged.

Based on the Law on Accounting, in July 2020, the following decisions were adopted and published in the RS Official Gazette, No 93/2020: the Decision on the Chart of Accounts and Content of Accounts in the Chart of Accounts for Voluntary Pension Fund Management Companies, Decision on the Content and Layout of Financial Statement Forms for Voluntary Pension Fund Management Companies, Decision on the Chart of Accounts and Content of Accounts in the Chart of Accounts for Voluntary Pension Funds, Decision on the Content and Layout of Financial Statement Forms of Voluntary Pension Funds and Decision on the Content and Layout of the Statistical Report for Voluntary Pension Fund Management Companies and Voluntary Pension Funds. The last three Decisions will apply starting with the financial reports compiled as at 31 December 2021.

VPF contributions were on a continuous increase over the last couple of years. However, in 2020, contributions declined from the previous year, which is inevitably a consequence of the pandemic. Though individual contributions are possible, most contributions are made through employers who, in this way, display a high level of responsibility towards their staff. Ample potential for further growth in the membership base are companies with high staffing levels. Investment tax incentives have also exerted a positive impact on the VPF sector. In 2020 payments made by employers in the amount of up to RSD 5.984[99] were exempt from personal income tax and contributions for mandatory social insurance, as well as payments in the same amount made by the employer through wage garnishment. This represents an additional incentive to employees and employers to direct a part of the wage to saving in VPFs.

II.3.3 Financial leasing

In 2020 the financial leasing sector continued to record positive results. The sector's balance sheet assets increased further and improved in quality, owing to the additional reduction in non-performing receivables.

Financial leasing is a type of financial intermediation. The lessor keeps the ownership of the lease asset, while transferring to the lessee, in exchange for the lease payment, the right to hold and use the asset for an agreed period of time, with all the risks and rewards of ownership.

At end-2020, there were 16 lessors in the Serbian financial leasing sector, three of which undergoing voluntary liquidation.

Financial lessors were mostly owned by banks, i.e. members of banking groups (as many as 11 lessors). Seven lessors were in 100% or majority ownership of foreign legal entities, while nine lessors were in majority ownership of domestic entities (of which eight were owned by domestic banks with foreign capital). The employment in the sector edged down relative to the year before (from 349 to 336 employees).

Lessors' balance sheet assets continued growing. At end-2020, they stood at RSD 115.3 bn, up by 12% relative to end-2019 (RSD 102.9 bn).

The share of non-performing receivables in total investment was further reduced. At end-2020, gross receivables past due (RSD 2.5 bn) made up 2.4% of gross financial leasing receivables (2.8% at end-2019). The share of net carrying value of these receivables in total net receivables remained broadly unchanged relative to end-2019 (0.6%). Receivables past due more than 90 days made up the largest share of total receivables past due. At end-2020, these receivables amounted to RSD 1.7 bn. Their share in total gross receivables from financial leasing accounted for 1.6% (2% at end-2019). The net carrying value of receivables past due more than 90 days made up 0.1% of the total net portfolio.

Total lessors' capital at end-2020 equalled RSD 9.3 bn, down by 1.4% from the end of last year.

At RSD 616.1 mn in 2020, the pre-tax result of the financial leasing sector was lower than the result achieved last year (RSD 1 bn). Net profit came at RSD 371 mn, with most lessors posting a positive net result (9 lessors). Total revenue and profit in 2020 equalled RSD 4.3 bn, increasing by 4.8% from the year before, and total expenses and losses – RSD 3.7 bn, up by 20.1% relative to 2019.

At end-Q4 2020, ROA and ROE were lower than at end-2019. ROA decreased from 1.15% to 0.56%, while ROE

[99] Under Government decree, this amount is adjusted for previous-year inflation once a year.

recorded a significant fall, from 11.27% at end-2019 to 6.58% at end-2020.

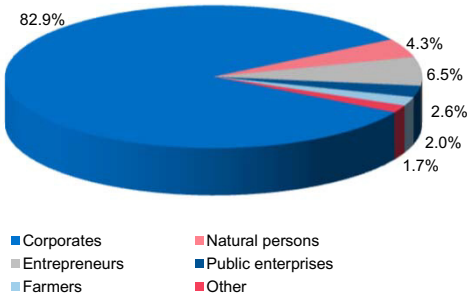
Structure of lessees

The structure of lessees stayed largely unchanged. Like in the previous years, the most important lessees were companies outside the financial sector, with a 82.9% share in total investment, slightly less than in 2019 (83.5%).

As can be seen in Chart II.3.15, entrepreneurs accounted for 6.5% of total investment (5.9% in 2019), public enterprises for 2.6% (2.5% in 2019), natural persons 4.3% (3.9% in 2019) and farmers 2.0% (2.2% in 2019).

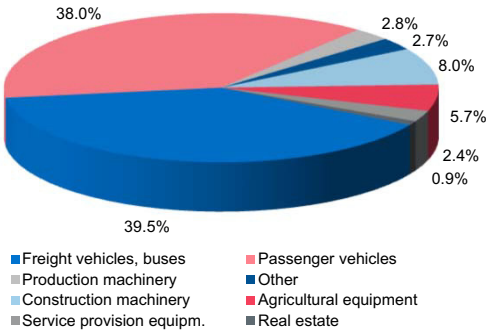
Amid potential risks caused by the emergency health situation due to the coronavirus pandemic, the NBS adopted a set of temporary measures in order to preserve financial system stability. Among other things, the NBS adopted temporary measures related to the leasing sector. In March 2020, the NBS adopted the Decision on Temporary Measures for Lessors Aimed at Preserving Financial System Stability (RS Official Gazette, No 33/2020). This Decision sets out the measures and activities which a lessor is required to apply in the conditions of the pandemic for the purpose of preserving financial system stability in the Republic of Serbia due to possible difficulties in the repayment of liabilities by lessees. In July 2020, the NBS adopted the Decision on Temporary Measures for Financial Lessors for the Purpose of Mitigating the Consequences of COVID-19

Chart II.3.15 **Investment structure by lessee as at 31 December 2020**



Source: NBS.

Chart II.3.16 **Investment structure by lease asset as at 31 December 2020**



Source: NBS.

Structure of investment by lease asset

As Chart II.3.16 indicates, financing of freight vehicles, minibuses and buses, which has the largest share in the structure of investment by lease asset, declined slightly in 2020 (from 39.9% at end-2019 to 39.5% at end-2020). The financing of passenger vehicles increased (from 36.5% in 2019 to 38% in 2020), and the share of financing of agricultural machinery and equipment edged up (from 5.6% in 2019 to 5.7% in 2020).

The share of balance sheet assets of this sector in the country's financial system stayed unchanged from end-2019, and equalled 2.3% at end-2020. Given that this share is still low, potential risks in financial leasing operations could not have a significant effect on the stability of the financial system as a whole.

Pandemic in Order to Preserve Financial System Stability (RS Official Gazette, No 103/2020). This Decision sets out the measures and activities aimed at overcoming potential difficulties in the repayment of financial leasing debt by both citizens and corporates and at mitigating the negative effects amid the state of emergency caused by the COVID-19 pandemic. Finally, in December 2020, the NBS adopted the Decision on Temporary Measures for Financial Lessors to Enable Adequate Credit Risk Management amid Covid-19 Pandemic (RS Official Gazette, No 150/202). This Decision sets out the measures and activities which a lessor is required to apply for the purpose of adequate credit risk management in the conditions of the pandemic, by duly recognising potential difficulties and offering facilities for the repayment of

liabilities to lessees (natural or legal entities), in accordance with the prescribed conditions.

In addition to the decisions on temporary measures, pursuant to the Law on Accounting, the following decisions were also adopted: Decision on the Content and Layout of Financial Statement Forms for Financial Lessors, Decision on the Layout and Content of the Statistical Report for Financial Lessors and Decision on the Chart of Accounts and the Content of Accounts in the Chart of Accounts for Financial Lessors (RS Official Gazette, No 93/2020).

In December 2020, pursuant to the Law on Financial Leasing, the NBS adopted the Decision on Management of Risks Arising from Introduction of New Products/Services by Lessors (RS Official Gazette, No 149/2020). This Decision sets out detailed conditions and manner of identifying, measuring and assessing, i.e.managing the risks to which a lessor is exposed in its operations based on the introduction of new products, services and activities related to the lessor's processes and systems.

II.3.4 Payment institutions and electronic money institutions

In the past period, the NBS improved the regulatory framework for the provision of payment services in order to achieve greater efficiency and transparency and to ensure more information and enhanced protection of payment service users. Payment institutions operate in the Republic of Serbia since October 2015, i.e. since the start of application of the Law on Payment Services. According to the data for 2020, an increase was recorded for almost all payment services provided and e-money issuing, primarily for cashless payments. The total number of e-banking users also went up.

Pursuant to the Law on Payment Services, applied since the beginning of October 2015, special institutions registered to provide payment services[100] and issue e-money operate in Serbia – payment institutions and e-money institutions. Payment institutions may only be companies, in accordance with the law governing companies, headquartered in the Republic of Serbia and licensed by the NBS to provide payment services.

Given its significant role in the AML/CFT system, in assessing the applications for licences for the provision of payment services and e-money issuing, the NBS pays special attention to the aspects of these applications relating to the prevention of money laundering and terrorism financing.[101] At end-2020, there were fourteen payment institutions[102] licensed by the NBS to provide payment services. Of these, 11 payment institutions also provided payment services through a network of their agents. Four leading international companies for fast money transfer carry out transactions via payment institutions and their agents. Along with Western Union – already present in Serbia, MoneyGram, Ria Money Transfer and Small World operate in the domestic financial market, via the newly established payment institutions.

An e-money institution may only be a company headquartered in Serbia, in accordance with the company law. It is authorised to issue e-money subject to the NBS's licensing. The first licence to issue e-money was granted in 2016. At present, four institutions licensed to issue e-money operate in the market.[103] In addition to e-money issuing, e-money institutions can also provide payment services both at their location and through a network of their agents. Unlike the domestic licensed e-money institutions, the services of e-money institutions from third countries, which operate in accordance with the Law on Foreign Exchange Operations and whose names are published by the NBS on its website[104] (e.g. Paypal, Skrill, Payoneer, Paysafe Financial Services Limited, Google Payment Corp. and PayeerLtd.) may only be used in foreign payment transactions (for payments and collections with respect to e-purchase and sale of goods and services).

In addition to licensing, the NBS also carries out supervision of all payment service providers and e-money issuers in the part of their operations relating to the provision of payment services and/or e-money issuing. The NBS website offers to users an overview of the fees charged for specific services linked to a payment

[100] Payment services include services that enable cash payments to and from payment accounts, and all services required to open, maintain and close those accounts, services of transfer of funds to and from payment accounts, execution of payment transactions where funds are covered by a credit line, services of issuance and/or acceptance of payment instruments, money remittance services and the execution of payment transactions where the payer gives consent by means of a telecommunication, digital or IT device.

[101] In this procedure, it is particularly considered whether the origin of capital of the applicant can be identified, and/or the source of funds for acquiring a qualifying holding and whether these persons or persons related to them have been associated with money laundering and financing of terrorism – based on the information submitted by the body competent for the prevention of money laundering and financing of terrorism. In this regard, the NBS particularly assesses whether a prospective acquirer of a qualifying holding is a public official, a close family member or a close associate of a public official within the meaning of the law governing the prevention of money laundering and terrorism financing.

[102] https://www.nbs.rs/en/finansijske-institucije/pi-ien/registar-pi/index.html

[103] https://www.nbs.rs/en/finansijske-institucije/pi-ien/registar-ien/index.html

[104] https://nbs.rs/export/sites/NBS_site/documents-eng/platne-institucije/lista_ien_trece_drzave_en.pdf

account, and also comparable data on fees charged by payment service providers. By enhancing transparency, the NBS enabled the users to get better information on the level of fees charged for the aforementioned services. At the same time, this contributes to stronger competition among payment service providers in terms of their price policy with the aim of providing competitive and reduced prices in the market so as to attract new and keep current clients.

According to the data for 2020, an increase was recorded for almost all payment services provided and e-money issuing, and especially for cashless payments. Relative to 2019, the total number of e-banking users grew by 14.83% and m-banking users by 26.99%. The rise in the relative importance of m-banking can be seen in the y-o-y increase in the number of transactions executed by natural and legal persons and entrepreneurs (50.77%). Despite the negative impact of the pandemic, the number of e-banking transactions executed by entrepreneurs and legal persons grew by 3.20% y-o-y.[105]

Since the outbreak of the crisis caused by the coronavirus pandemic, the NBS undertook numerous activities in the field of payment services with the aim of facilitating daily payments to our citizens, amid the application of health measures, so that they could dispose with the money on their accounts. The Law on the Protection of Financial Service Consumers in Distance Contracts (RS Official Gazette, No 44/2018), which was adopted in 2018 at the proposal of the NBS, and the Decision on Conditions and Manner of Establishing and Verifying Identity of a Natural Person through Means of Electronic Communication (RS Official Gazette, Nos 15/2019 and 84/2020) enable conclusion of distance financial service contracts between banks and financial services users. This enables both legal persons and entrepreneurs to establish a business relationship with a financial institution supervised by the NBS online, without going to the financial institution's business premises. This especially gains in importance during the pandemic, when it is important for clients to carry out as many of their regular activities as possible from home, including those related to financial services, through means of electronic communication and modern technologies. The majority of these contracts concern cash loans, authorised overdraft facility and savings deposits.

The number of concluded distance contracts increased by more than 25,000 compared to 2019[106], and at end-2020 amounted to around 70,000, supported by increased bank efforts to maintain business continuity while respecting counter-pandemic measures.

The new methods of payment and technological innovations in the payment services market are the result of the NBS's continuous efforts over a number of years aimed at creating appropriate regulatory and other preconditions for modernising and improving payment operations in Serbia.

[105] Overview of data on the provision of payment services and e-money issuing for 2019–2020.
https://nbs.rs/export/sites/NBS_site/documents-eng/platni-sistem/ps_saopstenje_20210226_e.pdf

[106] https://nbs.rs/export/sites/NBS_site/documents-eng/platni-sistem/ps_saopstenje_20210226_e.pdf

III Financial markets

Given the scale of the global crisis caused by the coronavirus pandemic, monetary policy easing continued into 2020. Interest rates went down, thus lowering the costs of borrowing in the domestic market. Achieved macroeconomic and fiscal stability in the earlier period, together with timely measures of monetary and fiscal policies helped keep the credit rating one step away from investment grade. In order to provide additional dinar liquidity, the NBS organised auctions of repo purchase of government securities and additional FX swap auctions. In 2020, Serbia successfully issued eurobonds in the international financial market, and the first twelve-year dinar government bond, thus extending the dinar yield curve. The achieved economic policy results were also confirmed in February 2021, when it was announced that Serbia's dinar government bonds will be included in J.P. Morgan's GBI-EM index as of June 2021.

III.1 Money market

In early 2020, global economy faced an unprecedented crisis due to the outbreak of the coronavirus pandemic. As the virus spread fast globally, various measures were introduced, triggering heightened uncertainty in the international commodity and financial markets. Most countries experienced the consequences of the crisis starting from March and April 2020.

To diminish the negative effects of the pandemic, many central banks across the world responded by easing their monetary policies and introducing conventional and unconventional measures. In 2020, the ECB kept its key rates unchanged (main refinancing operations rate at 0.00%, marginal lending facility rate at 0.25% and deposit facility rate at -0.50%). In addition, it temporarily expanded the scale of net asset purchases of the private sector, gave more favourable conditions for long-term lending to banks through the TLTRO and introduced a new bond-buying programme Pandemic Emergency Purchase Program, as well as a new long-term refinancing programme PELTROs (Non-Targeted Pandemic Emergency Longer-Term Refinancing Operations).

The Fed trimmed its federal funds rate and introduced a number of non-conventional measures against the backdrop of increased uncertainty. In March 2020, it trimmed its target federal funds range twice, by a total of 150 bp, to a target range of 0.0–0.25%, and implemented its QE programme. The Fed started conducting temporary repo transactions to inject additional liquidity to banks, as well as international repo and dollar swap transactions, which ensure dollar liquidity to foreign central banks and other monetary authorities. Additionally, the Fed launched a number of programmes to provide support to household and corporate credit activity, and also encouraged banks to use their capital and liquidity buffers in approving loans to households and corporates.

Serbia responded to the crisis triggered by the COVID-19 pandemic with timely and adequate monetary and fiscal policy measures. The NBS was the first institution in the country and one of the first central banks in the region which responded to the pandemic by adopting concrete measures aimed at providing support to domestic economy and citizens. By trimming the key policy rate throughout 2020, the NBS provided support to credit and economic growth and, by extension, to the Programme of Economic Measures adopted by the Serbian Government.

The relative stability of the RSD/EUR exchange rate was maintained throughout the year, even amid the heightened uncertainty induced by the coronavirus pandemic, with timely and adequate FX interventions. Moderate depreciation pressures, present since March as a consequence of the pandemic, waned gradually over the year, while November and December saw the prevalence

of appreciation pressures. In 2020, the dinar's value against the euro remained almost unchanged, thus continuing its years-long trend of relatively stable movements. Relative to end-December 2019, the dinar strengthened against the dollar by 9.7%, mostly as a result of the euro's appreciation against the US currency. The NBS continued implementing the managed float exchange rate regime, with the possibility to intervene in the FX market with a view to easing excessive short-term volatility of the dinar against the euro, and maintaining price and financial stability and an adequate level of FX reserves. In 2020, the NBS intervened in the interbank FX market as a net seller of EUR 1,450 mn (selling EUR 1,950 mn and buying EUR 500 mn). Gross FX reserves stood at EUR 13.5 bn at year-end (EUR 11.1 bn in net terms), up by EUR 113.2 mn from end-December 2019. During 2020, FX reserves were maintained at an adequate and stable level, which reinforced the resilience of the domestic financial system to shocks emanating from the international environment.

Serbia faced the crisis boasting a much better macroeconomic position than in the prior crises, with the average growth rate of around 4.4% in 2018 and 2019, and low and stable inflation for the seventh year in a row.

The spread of the coronavirus and heightened uncertainty in commodity and financial markets reflected on the increase in Serbia's risk premium, both on the euro and the dollar debt. EMBI risk premium for Serbia, based on US dollar debt, calculated by the renowned US financial institution J.P. Morgan, stopped being published as of the last day of August 2020. The reason is that there were less than 13 months left to maturity of the only Serbia's dollar eurobond at that moment, and according to J.P. Morgan's criteria this is when the bond is excluded from the index calculation. US-dollar EMBI for Serbia was republished on 31 December 2020, when J.P. Morgan introduced a ten-year eurobond in dollars, issued in November 2020. On that day, it measured 128 bp (the risk premium measured 19 bp at end-2019). After the first issue of the euro-denominated eurobond in the international financial market in June 2019, data became available on the EURO EMBIG risk premium for Serbia based on euro-denominated debt. At end-2020, EURO EMBIG for Serbia stood at 143 bp (109 bp at end-2019), lower than for most countries in the region (Montenegro 341 bp, Romania 202 bp, North Macedonia 171 bp), and higher than for Hungary (107 bp) and Croatia (76 bp).

As a result of the achieved macroeconomic and fiscal stability, as well as timely monetary and fiscal policy measures, the credit rating was kept a notch away from investment grade throughout 2020. Owing to Serbia's good economic indicators, which were preserved during the coronavirus pandemic, in March and September 2020, Fitch Ratings affirmed Serbia's Long-Term Foreign and Local-Currency Issuer Default Ratings at BB+ (a step away from investment grade), with a stable outlook for further rating upgrades. Standard & Poor's affirmed Serbia's Long-Term Foreign and Local-Currency Issuer Default Ratings at BB+ on three occasions in 2020 (May, June and December), while their outlook changed from "positive" to "stable" in May. As leading central banks eased their monetary policies, foreign investors continued to invest in long-term government securities, affirming that Serbia remained a favourable investment destination thanks to its achieved and preserved macroeconomic stability, even during this unprecedented crisis.

In March 2021, Moody's improved Serbia's credit rating outlook from Ba3 to Ba2, despite the global conditions marked by the coronavirus pandemic. Low and stable inflation, relative stability of the exchange rate, reduced external imbalances and full coverage of the current account deficit by the FDI inflow were, among other, the main reasons behind Moody's decision to improve Serbia's credit rating. Moreover, adequate level of Serbia's FX reserves, increased economic diversification and lower fiscal risks stand out. Besides raising Serbia's credit rating, Moody's also established a stable outlook for its further upgrades. In March 2021, Fitch Ratings also confirmed Serbia's Long-Term Foreign and Local-Currency Issuer Default Ratings at BB+, with a stable outlook. As Fitch Ratings points out, Serbia's rating is supported by a credible macroeconomic policy, which keeps the inflation low and stable, increases the FX reserves and the resilience of the Serbian economy to global shocks caused by the pandemic. Owing to the achieved and preserved overall stability, Fitch estimated that favourable fiscal outlook can be expected in the coming period.

In 2020, the NBS key policy rate was trimmed on four occasions, in March by 0.50 pp, and in April, June and December, each time by 0.25 pp, to 1.00% – at the time, its lowest level in the inflation targeting regime. Decisions about monetary policy accommodation were primarily influenced by the NBS's effort to provide additional support to domestic economy, having in mind the scale of the pandemic-induced crisis worldwide, worsening of the epidemiological situation and economic slowdown globally, and especially in Europe. In 2020, the corridor of its main interest rate was narrowed twice, in March (from ±1.25 pp to ±1 pp relative to the key policy

rate), and in December (from ±1.0 pp to ±0.9 pp relative to the key policy rate). Expansive monetary policies by leading central banks (ECB and Fed) created room for further NBS monetary policy accommodation aimed at mitigating the consequences of the coronavirus crisis. Significant uncertainties in the international financial and commodity markets mandated caution in the pursuit of monetary policy.

Inflation remained low and stable in 2020, and for the major part of the year it moved within the bounds of the target tolerance band (3%±1.5 pp). Inflation slowed down at end-Q1 2020, measuring 1.3% y-o-y in March. Throughout the major part of Q2, inflation moved below the lower bound of the target band, and in April it recorded its lowest level in 2020 (0.6% y-o-y). In December 2020, inflation measured 1.3% y-o-y, and was below the lower bound of the target tolerance band.

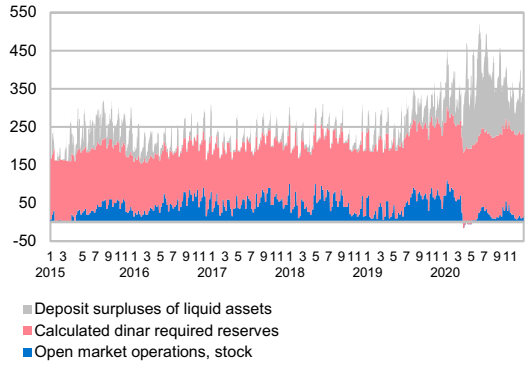
In 2020, the NBS continued to implement reverse repo transactions (repo sale of securities with one-week maturity) as its main open market operations, in order to absorb excess dinar liquidity of the banking sector. The average rate at one-week repo auctions[107] of the NBS followed the reduction in the key policy rate, and at the last repo auction in 2020, the repo rate was 0.10% (1.02% at the last repo auction in 2019). Compared to end-2019, banks scaled down their investment in NBS reverse repo transactions from RSD 70.0 bn to RSD 30.0 bn at end-2020 (Chart III.1.1).

In order to support the domestic financial system and overall economic flows amid the coronavirus pandemic, the NBS provided the banking sector with additional dinar liquidity under favourable conditions by organising auctions of repo purchase of dinar government securities. In three of these auctions held in March, at a fixed rate, the NBS provided banks with dinar liquidity worth RSD 5.7 bn for a period of seven days and RSD 20.5 bn for a period of three months, at a deposit facility rate (0.75%). Though the banking sector operated at considerable excess dinar liquidity, in order to sustain the stimulating effect on economy, in mid-November 2020, the NBS adopted the decision to hold regular one-week auctions of repo purchase of dinar government securities and additional FX swap purchase auctions in order to supply banks with dinar liquidity for a period of three months. In 2020, the NBS held seven auctions of repo purchase of dinar government securities at a fixed rate, which equals the deposit facility rate, ensuring dinar liquidity in the total amount of RSD 15.4 bn.

Moreover, the NBS provided banks with additional liquidity through permanent purchase of dinar government securities in April and May 2020 in the amount of RSD 97 bn, and included dinar corporate bonds issued by domestic companies in NBS monetary operations, whose partial purchase in 2020 provided additional liquidity in the amount of RSD 27.5 bn.

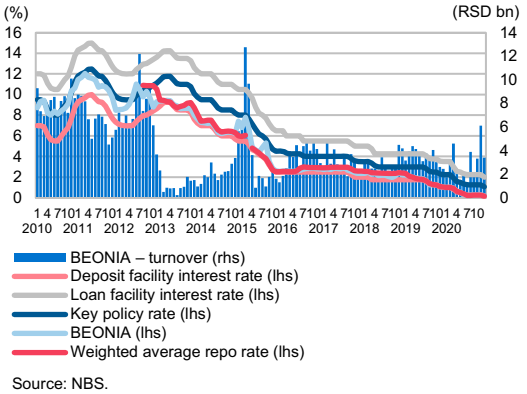
In July 2020, the NBS and the ECB set up a precautionary repo line to provide additional euro liquidity to the Serbian financial system, in case of need. In this way, an additional type of support is secured for the domestic economy in conditions of the COVID-19 pandemic. Under a repo line, the ECB provides euro liquidity to a non-euro area central bank in exchange for adequate euro-denominated collateral. The initial deadline for using this repo line was

Chart III.1.1 **Selected NBS monetary policy instruments**
(RSD bn)



Source: NBS.

Chart III.1.2 **Key policy rate, BEONIA and interest rates on deposit and loan facilities**
(monthly averages of daily data)



Source: NBS.

[107] The rate achieved at repo auctions weighted by the amount of securities sold.

until the end of June 2021, and in February 2021, that deadline was extended by nine months, i.e. until March 2022. There has been no need for the NBS to use the funds under the ECB precautionary repo line as yet.

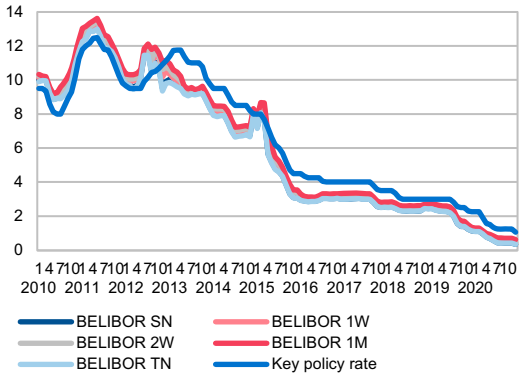
Turnover in the interbank overnight money market in 2020 decreased relative to 2019 (from RSD 41.7 bn to RSD 34.9 bn) (Chart III.1.2). The average daily turnover in 2020 equalled RSD 2.9 bn, which is below the average daily turnover in 2019 (RSD 3.5 bn).

Key policy rate cuts transferred onto interest rates in the interbank money market, as well. Throughout the year, BEONIA[108] oscillated around the average repo rate. The average BEONIA rate in December 2020 measured 0.20% (1.04% in December 2019). Average BELIBOR rates in December 2020 ranged from 0.3% for the shortest to 1.1% for the longest maturity, which is lower than in December 2019, when they ranged between 1.1% and 1.8% (Chart III.1.3).

To encourage the development of the interbank swap market and enable more efficient liquidity management by banks, the NBS organises regular two-week and three-month FX swap purchase/sale auctions. This instrument was actively used as of mid-March for the provision of additional dinar and FX liquidity to banks amid the spread of the coronavirus. In addition to regular swap auctions, in March the NBS also organised an additional three-month FX swap auction of purchase at fixed swap points, in which it swap bought EUR 127 mn, thus providing dinar liquidity in the amount of RSD 14.9 bn. Moreover, in the period from end-March to end-May 2020, the NBS organised regular FX swap auctions at fixed swap points, instead of variable multiple swap points. Also, the realization principle at FX swap auctions was changed, so swap purchase and sale of foreign currency did not have to be identical in the executed amount. In this way, the NBS's role in FX swap auction was not solely mediating, but involved also the provision of a sufficient amount of dinar and FX liquidity to banks, at favourable interest rates. As of November 2020, additional three-month swap auctions of purchase of foreign exchange at fixed swap points were introduced, which were held on a regular weekly basis.[109] In the period from mid-November to end-2020, in seven additional three-month swap auctions of purchase of foreign exchange, the NBS swap bought EUR 207 mn, thus providing dinar liquidity in the amount of RSD 24.3 bn. In 2020, the NBS swap bought EUR 956.0 mn and swap sold EUR 800.5 mn (in 2019, it swap purchased EUR 1,080.5 mn, and swap sold EUR 513.5 mn). The volume of interbank swap transactions equalled EUR 162.0 mn in 2020, higher than in 2019 (EUR 147.3 mn).

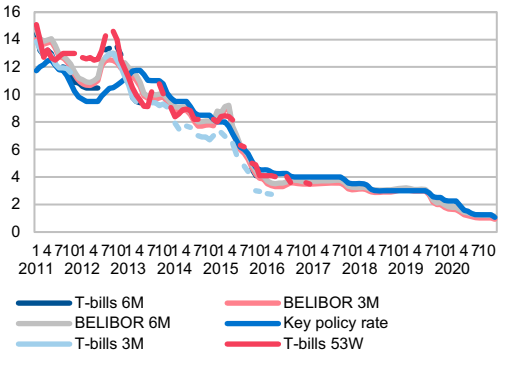
For the first time since 2017, April 2020 saw the issue of 53-week T-bills. In the two held auctions, the entire issue worth nominal RSD 35 bn was sold out. No euro T-bills were issued in 2020.

Chart III.1.3 **BELIBOR interest rates**
(monthly averages, %)



Source: NBS.

Chart III.1.4 **Interest rates in the money market and auctions of dinar T - bills**
(monthly averages, %)



Sources: Ministry of Finance and NBS.

[108] The weighted average overnight rate in the interbank money market in the Republic of Serbia.

[109] As of 15 March 2021, the NBS stopped implementing additional swap auctions, having estimated that this measure served its purpose well and that it was no longer necessary. Additional auctions of repo purchase of dinar securities on a regular weekly basis are still available to banks.

III.2 Bond and share market

The government bond market is one of the most important segments of the domestic financial market. The primary sale of these securities in the domestic market is organised by the Ministry of Finance – Public Debt Administration, by the auction method at a single interest rate. Considerable progress has been made in the previous period in terms of increasing the average maturity of government dinar securities and reducing the financing costs on account of this type of borrowing.

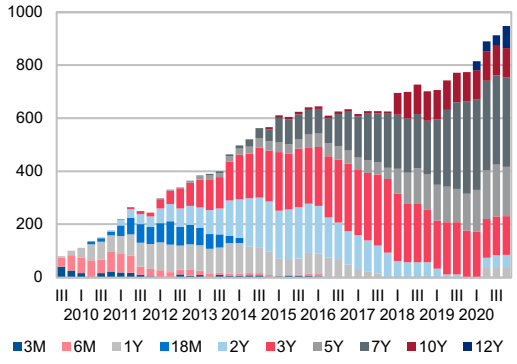
Through the sale of dinar bonds, the government borrows in the domestic market under relatively favourable terms, thus reducing exposure to FX risk and contributing to further dinarisation of the financial system. In addition to primary auctions, in 2020, the Ministry of Finance's Public Debt Administration organised two early buyback auctions of a part of three-year and seven-year government dinar securities, which in total amounted to RSD 10.2 bn (RSD 35.1 bn in 2019).

The stock of sold dinar government bonds with maturity of over one year amounted to RSD 912.6 bn at end-2020, or 17.9% more than at end-2019 (Chart III.2.1). As for the structure of dinar government bonds, at end-2020, seven-year bonds made up the dominant share (36.9%), which is less than in 2019 (45.0%), while the share of five-year government bonds increased in 2020 from 17.8% to 20.5%.

The issuance of benchmark bonds, which started as of 2016, continued in 2020. When issuing benchmark bonds, the planned sales volume is only a part of the total issue, so that the issue of those bonds can be reopened multiple times throughout the year. These issues boost the volume of secondary trading. Also, the issuance of these bonds is one of the requirements for the inclusion of government securities in the Local Currency Government Bond Emerging Market Index. In February 2021, J.P. Morgan made an official announcement that Serbian government bonds will be included in GBI-EM Global Diversified Index in June 2021. This index is one of the most frequently watched indices, i.e. one of the benchmark indices of bonds issued in local currencies of emerging economies, and it is expected that the share of dinar bonds in this index will stand around 0.33%. Serbia's dinar bonds will also be included in GBI-Aggregate (GBI-AGG) and GBI-AGG Diversified.[110] The mentioned index will include three benchmark issues of dinar bonds, which mature on 11 January 2026 (seven-year maturity), 6 February 2028 (ten-year maturity) and 20 August 2032 (twelve-year maturity).

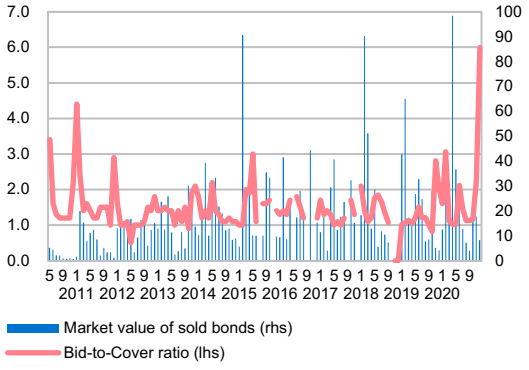
In 2020, the government auctioned two-year, three-year, five-year and twelve-year dinar bonds. In 2020, the first twelve-year dinar government bond was issued (coupon rate of 4.5%, maturing on 20 August 2032) and sold in the nominal amount of RSD 83.3 bn in the nine held auctions (with the effective rates between 3.35% and

Chart III.2.1 **Stock of dinar government securities**
(nominal value, RSD bn)



Source: Ministry of Finance.

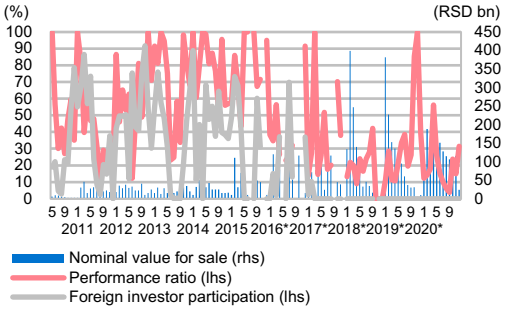
Chart III.2.2 **Market demand for dinar government bonds**
(primary auctions, RSD bn)



Source: Ministry of Finance.

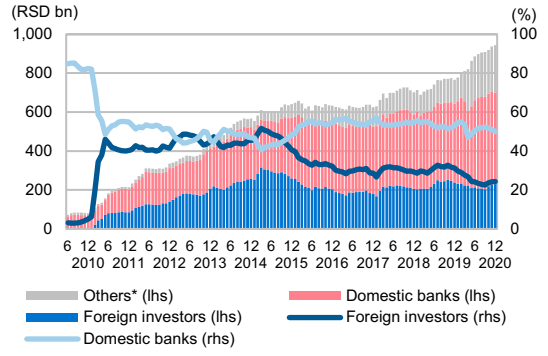
[110] The GBI-EM Global Diversified index is one of the most frequently watched indices by international investors, i.e. one of the benchmark indices of bonds issued in local currencies of emerging economies. GBI-Aggregate (GBI-AGG) and GBI-AGG Diversified indices cover government bonds in domestic currencies of both advanced and emerging economies.

Chart III.2.3 **Performance ratio and foreign investor participation in auctions of dinar government bonds**



* For benchmark bonds the total value of issue is shown and performance is expressed as a percentage of that value. The planned sale volume at these auctions was lower than the total amount issued.
Source: Ministry of Finance.

Chart III.2.4 **Structure of the portfolio of dinar government bonds**



* Custody banks, insurance undertakings, pension funds, natural persons and other legal entities.
Source: Central Securities Depository and Clearing House.

4.30%). The issuance of this bond extended the dinar yield curve, thus enabling banks to better form the price of long-term dinar loans.

The bid-to-cover ratio at primary auctions of dinar government bonds was relatively favourable. It reached the highest value (6.0) in December, and the lowest (1.0) in April and May 2020 (Chart III.2.2). Also, thanks to the high demand, the performance at primary auctions of dinar government bonds was extremely favourable (relative to the planned trading volumes).

Coupon rates and rates accepted at primary auctions of government bonds were reduced further during 2020. The coupon rates of three-year government bonds declined from 3.75% in 2019 to 2.00% in 2020. The three-year government bonds recorded a fall in the effective rate from 3.39% (auction held in June 2019) to 2.15% (last auction held in 2020), and the two-year bonds a fall from 4.05% (auction held in October 2017) to 1.95% (October 2020).

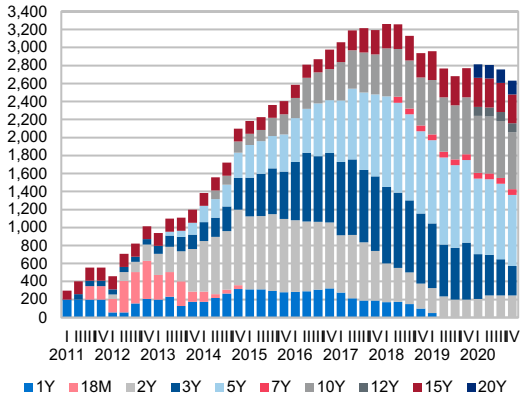
Coupon rates on euro-denominated government bonds also dropped, and at the last auction in 2020 two-year bonds were issued at a coupon rate of 0.5% (the coupon rate at the last auction in 2019 was 1.0%) and five-year bonds at the coupon rate of 1.0% (the coupon rate at the last auction in 2019 was 1.75%). January 2020 saw the first issue of 20-year euro-denominated bonds at a coupon rate of 3.50% and the entire issue worth EUR 150 mn in nominal terms was sold out. February 2020 saw the first issue of 12-year euro-denominated bonds at a coupon rate of 2.0%. In the two held auctions, the issue worth EUR 99.4 mn in nominal terms was sold out, at the effective rate of 1.89% in both auctions. The fall in coupon rates was accompanied by a decline in effective interest rates at primary auctions of these bonds. The effective rate on two-year euro-denominated government bonds fell by 0.34 bp, to 0.50%, while the rate on five-year euro-denominated bonds declined by 0.48 bp to 1.00%.

In 2020, foreign investor participation in the dinar government bond portfolio shrunk from 31.2% in December 2019 to 24.3% in December 2020. As shown in Chart III.2.4, as of end-2015 government bonds are predominantly owned by domestic banks. Their share in the portfolio of dinar securities[111] at end-2020 declined by around 3.0 pp relative to December 2019, and equalled 50.0%. Other domestic investors (insurance undertakings, pension and investment funds, etc.) still account for lower holdings of dinar government bonds, though there has been a gradual rise in their participation in recent years. Further diversification and strengthening of the base of domestic institutional investors will continue to be an important factor of improvement of the government bond market in the coming period, and of reducing the vulnerability of this market segment to movements in the international environment.

In May 2020, Serbia issued a seven-year euro-denominated bond in the international financial market, in the amount of EUR 2 bn, at the coupon rate of 3.125% and the yield of 3.375%. The funds earned in this auction were used to finance real sector support programmes, i.e. economic programmes amid the pandemic-induced crisis. In November 2020, Serbia issued in the international

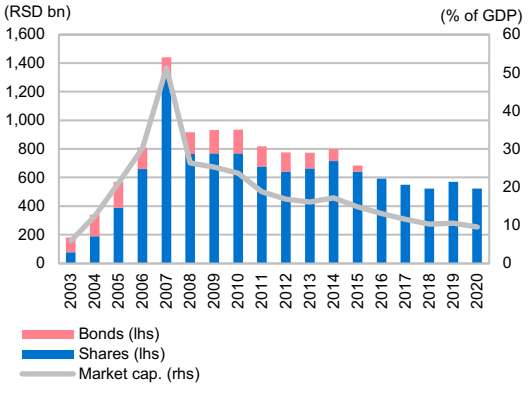
[111] Including government bonds and 53-week T-bills.

Chart III.2.5 **Stock of euro government bonds**
(nominal value, EUR mn)



Source: Ministry of Finance.

Chart III.2.6 **Belgrade Stock Exchange market capitalisation**



Sources: Belgrade Stock Exchange and NBS.

financial market ten-year bond in the amount of USD 1.2 bn, at the coupon rate of 2.125% and the yield of 2.35%. At the same time, aiming to shield public debt from FX risk, that is, from volatility in the exchange rate of the euro against the US dollar, Serbia carried out its first ever hedging via swap operations, whereby it converted liabilities under this eurobond from the dollar into the euro and thus achieved a de facto 1.066% coupon rate for financing in euros. The funds obtained through this issue were used for the early buyback of the bonds issued in 2011 at the yield rate of 7.50% and the coupon rate of 7.25% in the amount of USD 900 mn.

The volume of the euro-denominated government bond issue[112] (EUR 0.7 bn) in the domestic market was lower in 2020 than in 2019 (EUR 1.9 bn). Though the auctions of these bonds were characterised by high demand, as well as relatively high realisation, the stock of euro-denominated bonds with the maturity of over one year was EUR 138.4 mn lower in 2020 than in 2019, and equalled EUR 2.6 bn in December 2020 (Chart III.2.5). Accordingly, the currency structure of the issued government bonds was improved and government exposure to FX risk reduced. The biggest share in the total portfolio of euro-denominated government bonds was that of five-year (30.0%), ten-year (24.0%), three-year (12.4%) and fifteen-year bonds (12.2%).

Trading volume in the secondary market of dinar government securities in 2020 was lower than in 2019 (RSD 431.2 bn) and equalled RSD 416.6 bn. Secondary trading in euro-denominated securities amounted to EUR 664.7 mn (EUR 672.2 mn in 2019). The strategy of issuing benchmark bonds had a positive impact on trading volumes in the secondary market. As of November 2015, long-term government bonds were included to the BSE prime listing, and total trading in these bonds (both dinar- and euro-denominated) in the BSE in 2020 came at RSD 43.7 bn. The introduction of government bonds to regular trading in the BSE facilitated the access of individual investors to these instruments. The development of secondary trading in government bonds in the regulated market also contributes to greater transparency and liquidity of the secondary market of government bonds, and enables more efficient valuation of these securities.

Further development of the market of government securities can be expected as a result of the introduction of the function of primary dealers that should contribute to the improvement of the primary and secondary markets of government securities.[113] In order to further develop the capital market, in December 2020, the Law Amending the Law on Public Debt was adopted[114], which made certain adjustments and clarifications to ensure more efficient government borrowing in the domestic and international financial markets.

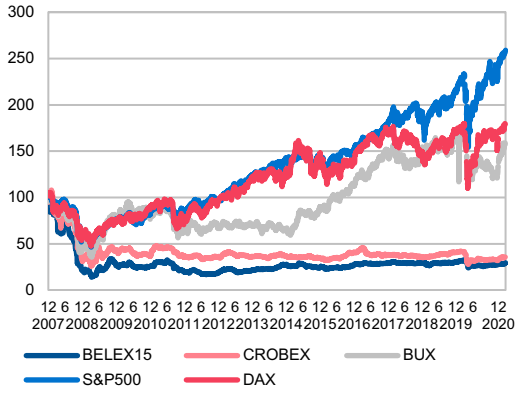
The BSE market capitalisation at end-2020 came at RSD 523.4 bn (around 9.6% of GDP) (Chart III.2.6). Market capitalisation in 2020 contracted in all market segments compared to 2019. Namely, in the part of the listing by RSD 25.1 bn, in the MTP[115] segment by RSD 10.6 bn and in the open market segment by RSD 10.5 bn.

[112] Government securities with two-year, five-year, 12-year and 20-year maturity.

[113] The function of primary dealers was introduced in the domestic regulatory framework in early December 2018, with the Law Amending the Law on Public Debt, RS Official Gazette, No 95/2018.

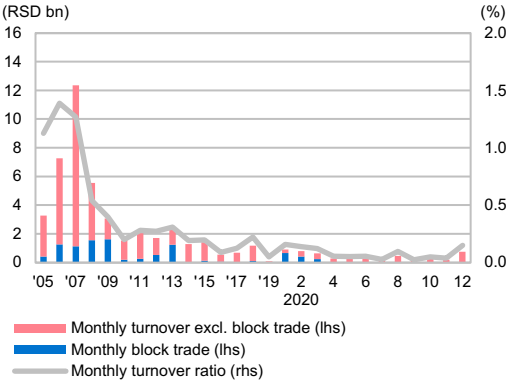
[114] RS Official Gazette, No 149/2020.

Chart III.2.7 **Stock market indices**
(index, 15 Nov 2007 = 100)



Source: Bloomberg.

Chart III.2.8 **Belgrade Stock Exchange share turnover**



Source: NBS, based on data of the Belgrade Stock Exchange.

During the year, indices oscillated in both directions. A significant decline in values, due to the strong first wave of the coronavirus, was recorded in March, when the indices recorded their lowest annual values (BELEX15 – 606.62 and BELEXline – 1,409.41). At the annual level, indices in regional stock exchanges displayed their lowest values in March (Chart III.2.7).

At end-December 2020, BELEX15 (the index of the most liquid shares) measured 748.61, down by 6.6% from end-2019 (801.69). In the same period, BELEXline index declined by 9.3% to 1,566.03.

Total shares turnover in the BSE in 2020 amounted to RSD 5.0 bn, down by RSD 35.7 bn relative to 2019. The largest share turnover was recorded by shares traded in the MTP and BSE open market segment (RSD 1.4 bn each).

One of the indicators of market liquidity is the monthly share turnover ratio[116]. The low average value of this ratio, which in December 2020 measured only 0.15%, suggests low BSE liquidity (Chart III.2.8). The value of the ratio in December 2020 was above its December 2019 value (0.05%), though it remained lower than pre-crisis, when it stood at 1.3% in 2007. However, stock market liquidity is even more unfavourable, taking into account that the ratio of the monthly turnover of shares also includes block trading in total turnover. Yet, as a one-off purchase of shares, block trading is only registered on the BSE and does not reflect actual liquidity of the stock exchange.

The declining trend in the number of transactions in the BSE continued. At 18,098 in 2020, it was lower than in 2019 (31,115).

Foreign investor participation in total turnover in the BSE in 2020 was 32.4%, down by 10.7 pp relative to 2019. Foreign investors were more active on the sale (42.4%) than on the purchase side (22.5%).

The corporate bond market is still in its infancy. In May 2020, the NBS included dinar corporate bonds in its monetary operations[117], thus encouraging the development of the domestic capital market. Thanks to this, some of the large domestic companies issued their bonds for the first time in 2020, which further supported the recovery of domestic companies by providing an alternative source of funding to relieve the burden on periodic cash flows. During 2020, two domestic companies issued five-year dinar corporate bonds.

On the other hand, starting from early March 2019, two-year dinar bonds of Erste Bank (maturing in February 2021) were included in the BSE Standard Listing, and during 2020 there was no trading in these bonds.

As corporate bonds are an alternative way to finance enterprises, which can be cheaper than borrowing from banks, the development of this segment can be very significant for domestic businesses. Still, the development of this market requires activities that would contribute to the higher supply of these instruments (e.g. lower costs of

[115] MTP – multilateral trading platform.

[116] Calculated as the ratio between the total monthly shares turnover and the average stock market capitalisation at two points in time (the end of the month observed and the end of the previous month).

[117] Corporate bonds issued by a domestic company with appropriate solvency may be the subject of purchase by the NBS, and may also be used as financial collateral to obtain loans for maintaining daily liquidity and short-term liquidity loans against the collateral of securities, and to obtain dinar liquidity in repo operations.

admission of these instruments to the regulated market), but also further development of domestic institutional investors (insurance undertakings, pension and investment funds) interested in corporate bonds.

To further improve the regulated capital market, domestic companies should be encouraged to finance their growth by raising capital through initial public offerings of shares. In addition, increasing the number of issuers whose shares are actively traded would further contribute to the development of the BSE, and to a greater presence of institutional investors interested in those instruments.

The Law on the Capital Market was amended first in February 2020 in order to harmonise it with the needs of practice and other laws that have been amended in the meantime, but also to bring it closer to EU regulations. The amendments to this law enabled foreign legal entities to clear and settle transactions related to the purchase/sale of government securities issued in the domestic market, which facilitated access to the domestic capital market for foreign investors. This should raise the efficiency of the domestic financial market and broaden the base of investors in government securities, and thereby contribute to more favourable terms of government financing. The following amendments from December 2020 were adopted with the aim of providing companies with a faster and easier access to financial resources necessary for regular business activities or business improvement and expansion, with lower costs when issuing these securities. At the same time, it is expected that the issuance of corporate debt securities and their listing on the BSE will have a positive impact on the development and stability of the capital market in the Republic of Serbia.

In 2019, the Ministry of Finance set up a working group for capital market development which includes all relevant institutions in Serbia, with the support of international institutions. In 2020, the working group continued to prepare strategy for the purpose of this market's further development and its financing. In addition, the working group for the development of the capital market prepared a strategic overview of the main goals, priority areas and measures, which will serve as guidelines for further development of the strategy and action plan for the improvement of the capital market in Serbia.

The development of new financial instruments can additionally contribute to further development of the domestic financial market. Also, to increase investment of domestic natural persons, additional efforts are needed to educate citizens and continue promoting financial inclusion. The improvement of current regulations and their alignment with the movements of the capital market at the EU level can also have positive effects on further development of the domestic financial market.

III.3 Financial infrastructure

Payment and settlement systems make up the financial market infrastructure, significant for timely execution of payment transactions and financial instrument transfers stemming from economic activities of different entities. A safe and efficient financial infrastructure is a prerequisite for the stability of the financial market and the financial system as a whole.

Ensuring efficient and safe payments, as the key pillar of financial and economic infrastructure of a country, is one of the main functions of central banks. Pursuant to Article 4 of the Law on the National Bank of Serbia (RS Official Gazette, Nos 72/2003, 55/2004, 85/2005, 44/2010, 76/2012, 106/2012, 14/2015, 40/2015 – CC decision and 44/2018), the NBS regulates, oversees and promotes smooth performance of domestic and cross-border payment transactions.

Efficient and reliable functioning of payment systems is particularly important for the NBS as a central bank because of its other key functions as well, notably maintaining confidence in the national currency and ensuring financial stability.

The Law on Payment Services (RS Official Gazette, Nos 139/2014 and 44/2018) regulates the terms and manner of payment service provision, electronic money, payment systems and supervision of implementation of the provisions of this law. In line with the provisions of the Law on Payment Services which govern the finality of settlement in important payment systems, and regulations adopted under that law, the NBS RTGS and clearing systems are identified as important payment systems.

The following payment systems make up the infrastructure of Serbia's payment transactions: (1) NBS RTGS payment system; (2) NBS clearing payment system; (3) NBS IPS payment system; (4) NBS interbank clearing of foreign exchange payments; (5) International clearing of foreign exchange payments; (6) DinaCard clearing system; (7) ASB cheque clearing system; (8) ASB direct debit clearing system.

The NBS is the operator of the following payment systems: (1) NBS RTGS payment system; (2) NBS IPS payment system; (3) NBS clearing system; (4) NBS interbank clearing of foreign exchange payments; (5) International clearing of foreign exchange payments; (6) DinaCard clearing system.

The NBS RTGS system is a payment system for the transfer of dinar funds between participants on a real time gross settlement basis and makes an efficient channel for the implementation of monetary policy measures. It is regulated by the Operating Rules of the RTGS Payment System of the National Bank of Serbia.[118]

Participants in this system are the NBS, banks with their head offices in the Republic of Serbia holding an operating licence issued by the NBS, in accordance with the law regulating banks, the ministry in charge of finance of the Republic of Serbia – Treasury Administration, the operator of the financial instruments settlement system, within the meaning of regulations governing the capital market, and the Association of Serbian Banks (ASB), as the operator of the direct debit and cheque clearing systems.

NBS RTGS system participants are able to adequately manage the risks they are exposed to because settlement is carried out in real time and at gross principle, in central banking money, and because central banks carry the lowest credit risk and are a source of liquidity in terms of the currency of settlement. Although the participants are not exposed to credit and liquidity risks in terms of funds used for the settlement, as in all RTGS systems, participants must have sufficient funds in their accounts so that transactions can be carried out smoothly. In that regard, NBS RTGS system participants are also able to manage their liquidity risk as the system enables them to view all their transactions, account balances and changes in the sequence of execution of payment orders depending on priority.

One of the indicators of importance of the RTGS system and its significance for the national economy is the value of payment transactions executed in the system over a certain period. In 2020, as much as 99.58% of the value of payment transactions in Serbia's financial infrastructure was executed in this system.

A total of 186.67 mn payments were carried out in the NBS RTGS system in 2020, with the total turnover amounting to RSD 110,472.5 bn. The highest monthly turnover was recorded in June (RSD 12,911.78 bn).[119]

Table III.3.1 **Value and number of payments in the NBS RTGS system**

	Average for period 2010–2019	2020
NBS RTGS		
Value, RSD bn	47,481.79	110,472.49
Number of payments, mn	146.52	186.67

Source: NBS.

One of the indicators of the importance of this type of systems for the national economy is the value of payments executed (total value of turnover) relative to GDP. In 2020, RTGS turnover was around 20 (20.22) times the value of Serbia's GDP.

The availability of the NBS RTGS and clearing systems is one of the key factors affecting the stability of the financial market. It is therefore worth noting that the availability of these two systems in 2020 (254 working days in total) was 99.98%.

In late 2020 the NBS marked two years of work of the NBS IPS payment system. The NBS established this system in October 2018 to promote innovation in the financial sector and support digitalisation as well as development of cashless payments in the country. That this possibility provided by the NBS to the citizens and corporates is significant is suggested by the fact that when the NBS IPS started operating, such systems were rare elsewhere in the world, and that it remains the only instant payment system in the region.

This system enables citizens and corporates to make payments in a 24/7/365 regime. Transfers are done in just a few seconds and the funds are at the recipient's disposal almost instantaneously.

Direct participants in the NBS IPS system are banks with their head offices in the Republic of Serbia, the NBS and the ministry in charge of finance of the Republic of Serbia – Treasury Administration, i.e. those participants that may have an account in this system under the operating rules of the NBS RTGS system.

Other payment service providers, if rendering payment services which include credit transfers, may be indirect

[118] Decisions on payment system and payment services https://nbs.rs/en/drugi-nivo-navigacije/propisi/propisi-ps/index.html

[119] https://nbs.rs/export/sites/NBS_site/documents/platni-sistem/statistika/rtgs/pp_06_20.pdf.

Table III.3.2 **Value and number of payments in the NBS IPS system**

	2019	2020
NBS IPS		
Value, RSD bn	90.6	220.6
Number of payments, mn	6.96	25.06

Source: NBS.

participants in two ways – as persons directly connected to the NBS IPS system and sending and/or receiving transfer orders in the NBS IPS system directly, or persons with indirect access in which case they are not directly connected to the system, but direct participants make payments in the system on their behalf.

A total of 25.06 mn payments were carried out in the NBS IPS system in 2020, with the total turnover amounting to RSD 220.6 bn, which is up to three and a half times more than in 2019. The dynamic growth of this innovative payment method is also evidenced by the eightfold breaking of the daily transactions record in 2020 – the highest number of payments was recorded on 21 December[120] (160,445 transactions).[121] The highest monthly turnover was also recorded in December (RSD 26.1 bn).[122]

To encourage greater use of digital technologies in daily payments, the NBS directed its activities toward the development of instant payments at points of sale as one of the key services for the acceptance of a new payment instrument. By creating an adequate regulatory framework and adopting a set of standards in cooperation with market participants, the NBS enabled users to pay for the goods and services bought at points of sale by simply showing and/or scanning the NBS IPS QR code (IPS Show and IPS Scan) using an upgraded m-banking application for instant payments. The implementation of this type of payments in the Serbian market is unique compared to other countries in that the NBS enabled banks to develop a new payment instrument by updating the existing m-banking applications, so that by using new functionalities the users can now initiate instant payment at a point of sale in a familiar environment and in a simple and fast manner.[123]

To further promote innovation in the financial sector and support the development of cashless payments in the country, most notably the development of instant payments, the NBS enabled technical preparation (generation)[124] and verification (validation)[125] of the NBS IPS QR code via a service on a special section of the NBS website – IPS QR code webpage.[126] Following a simple procedure, site visitors can generate, in accordance with the NBS technical specification and recommendations, their own NBS IPS QR code in a fast and simple manner and technically validate the code generated.

Promoting the development of a modern and inclusive retail payment market in Serbia, supported by a safe and efficient payment infrastructure, the NBS introduced in 2020 a number of other services as well. One novelty is the service "Withdraw dinars" for DinaCard users, which enables them to withdraw cash when making payments at points of sale (so-called purchase with cashback). In cooperation with the Government of Serbia, the project "E-Pay" was initiated, so as to offer citizens and corporates an efficient and reliable method for paying duties and fees for the services provided by public administration bodies.

Also, owing to the said functionalities of the NBS IPS system, in 2021 banks will enable m-banking users to transfer funds to the recipient by using only the recipient's mobile phone number. Namely, within the NBS IPS system, the NBS will facilitate a new service – "Transfer", the service of fast and simple transfer of money to a mobile phone number. This service will enable citizens to send and receive funds in a fast and safe manner any time, any place, in no more than a few seconds and just by using a mobile phone number.

With a view to creating conditions for banks to provide this service to citizens and corporates at the most favourable conditions, the NBS established the instant

[120] https://nbs.rs/export/sites/NBS_site/documents/platni-sistem/statistika/IPS/ips_12_20.pdf.

[121] The upward trend in the number of payments and value of executed daily transactions continues into 2021 and the new records of daily numbers of payments and value of transactions were registered on 17 February, 15 March and 15 April, when 205,525 payments were made worth RSD 1,908,352,679.81 which is the new record of daily transactions and daily value of executed transactions since the beginning of the system operation.
https://nbs.rs/sr_RS/scripts/showcontent/index.html?id=16854.

[122] https://nbs.rs/export/sites/NBS_site/documents/platni-sistem/statistika/IPS/ips_12_20.pdf.

[123] For more information, see the *Annual Financial Stability Report – 2019*, Text box 4: Development of instant payments in the Republic of Serbia, as impetus to cashless payments.

[124] NBS IPS QR code generator: https://nbs.rs/QRcode/generator_info.html

[125] NBS IPS QR code validator: https://nbs.rs/QRcode/validator.html

[126] NBS IPS QR code validator: https://nbs.rs/QRcode/index.html

payments fee policy at the lowest possible level.[127] The fees charged to the acceptor – payment service provider are several times lower than the fees charged by international card systems. All of the above boosted the number of instant payments and cashless payments in general, particularly at the time of the crisis caused by the coronavirus pandemic.

The rise in the number and value of cashless payments in 2020 brought about, among other things, by the increase in online purchases during the pandemic, has shown that the Serbian payment system is fully stable and safe and that it works smoothly in absolutely the same way as before the pandemic. Hence, it is ready to accept and process even a much greater number of transactions than before the pandemic.

Network of interbank transactions of the NBS RTGS payment system

Network indicators of the RTGS system are calculated to assess the connectedness of participants and create the basis for analysing the network's stability against potential shocks, and the effects of shock transmission in the network.

Network characteristics were analysed using daily data for the January–December 2020 period, on the basis of reports on interbank transactions in the NBS RTGS payment system. During 254 business days, only MT202 and MT103[128] interbank messages were analysed and used for each business day to model separate networks. Table III.3.3 shows the results of the analysis and the values of indicators for the entire network.[129]

During 254 business days in 2020, for the observed sample of transactions (MT202 and MT103), the average daily turnover was RSD 66.3 bn. The average number of transactions per day was 15,080.7 and the average value per transaction was RSD 4.4 mn.

The size of a financial network is defined by the number of its participants. The number of banks which actively participated in the NBS RTGS payment system was 26. The daily average of direct interbank links was around 605, meaning that a large number of banks had interbank MT202 and MT103 transactions on a daily basis. The average daily connectivity ratio of 69.88% was relatively high, which means that the interdependence of financial institutions was also high, as further indicated by the low average path length of 1.24,[130] i.e. the mean value of the shortest paths to any node.

Important parameters for analysing a network of this type are the mean value of the node degree and the value of the degree of the out node, which denotes the number of banks to which a specific bank makes payments. If a financial institution with a high value of this indicator faces an operational risk, i.e. inability to make payments, there is a higher probability of contagion to related nodes, i.e. financial institutions expecting to receive payments. For the entire NBS RTGS network, the average daily degree out was 18.17, which is relatively high given the number of banks participating in the system.

The average clustering coefficient, as the "potential" for clustering, was also high, averaging 89.09%, which means that the neighbouring nodes were connected to a larger extent.

The betweenness centrality reflects the frequency with which an individual institution is on the shortest path between other nodes of the network. Banks with high betweenness centrality are important in the payment system as they participate significantly in the transmission of shocks through the network.

The average betweenness centrality of 3.79% is rather low. However, following an analysis among banks, it can be ascertained that there were several nodes with high values of betweenness centrality and a large number of nodes with low values.

The average mean of the dissimilarity index, which is used to compare the entire network from the perspective of all pairs of neighbouring nodes, equalled 0.53 for the RTGS network. This means that from the perspective of any two neighbouring nodes, the RTGS network behaved in a homogeneous way and that the network looks similar from the perspective of most nodes.

Network indicators used to describe the characteristics of the payment system network take into account interbank

[127] The fee for transfer orders in the NBS IPS system, which the NBS as the payment system operator charges to system participants, equals the fee charged for retail payments in the NBS RTGS and clearing systems.

[128] Under the SWIFT standard, MT202 messages are used for the transfer of funds between payment system participants, and MT103 messages for single transfer orders for the account of payment service users. Besides, MT102 messages – group orders for retail payments – are also executed in the NBS RTGS system.

[129] A detailed explanation of the indicators is available in the *Annual Financial Stability Report – 2015*, Text box 4: Network modelling.

[130] The average path length for node h is the mean of all shortest paths to any node i, $l_h = \frac{1}{n}\sum_{h \neq i} d_{hi}$. At the network level, the average path length is defined as the ratio between the mean of average path lenghts for each node and the number of nodes, $l = \frac{1}{n-1}\sum_i l_i$.

Table III.3.3 **RTGS payment indicators (network-level)**

		Mean	Median	Maximum	Minimum	Standard deviation
Payments	Value (RSD mn)	66,275.22	68,886.76	80,325.78	52,421.64	9,379.79
	Number of transactions	15,080.71	15,061.40	18,114.83	11,808.05	1,687.62
	Average (RSD mn)	4.40	4.48	5.04	3.67	0.42
Network size	Nodes*	26.00	26.00	26.00	26.00	0.00
	Number of direct links	604.77	599.31	657.19	561.76	28.51
Distance measure	Average path length	1.24	1.23	1.27	1.20	0.02
Connectivity	Node degree	20.40	20.49	21.10	19.22	0.53
	Node out-degree	18.17	18.14	18.95	17.06	0.52
	Connectivity	69.88%	69.77%	72.88%	65.60%	2.02%
	Average clustering	89.09%	90.00%	91.11%	85.55%	1.85%
Others	Betweenness centrality	3.79%	3.85%	3.85%	3.70%	0.07%
	Dissimilarity index	0.53	0.32	1.01	0.29	0.31

* Calculations based on daily reports from the NBS RTGS system, for the period Jan-Dec 2020, interbank payments (MT202 and MT103). Payment value and number of transactions in all columns were calculated based on average values, analyzed on a monthly basis.

Source: NBS.

connectedness, while the turnover value in the form of a weight branch factor is also considered for the assessment of importance of a financial institution in the payment system network.

The analysis shows that the RTGS network was highly connected, but that there were several financial institutions that were more interconnected, which represents the basis for further analysis of network indicators at the level of individual institutions.

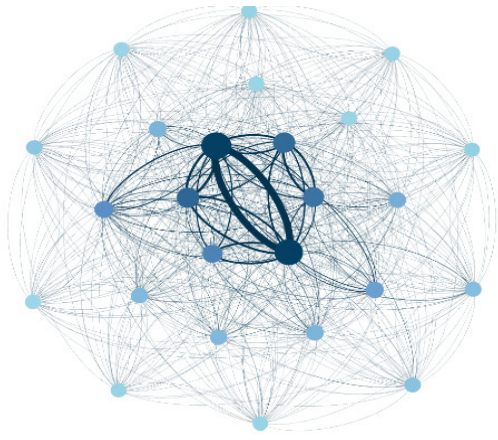
Identifying important banks in the payment system

A safe and efficient financial infrastructure is a prerequisite for the stability of the financial market and the financial system as a whole. It is therefore crucial to identify which banks are important payment system participants, considering the impact of their potential inability to perform payment transactions on payment system stability.

Network modelling of payment systems and the identification of systemically important participants provide a suitable basis for conducting payment system stress testing. The ECB,[131] central banks, as well as the IMF[132] have been increasingly including the stress testing of financial market infrastructure in their regular publications, taking into account the importance of the smooth operation of financial infrastructure.

Being an integral part of financial infrastructure, the payment system offers the network, structural and time perspective for the analysis of interbank relations. Based on the analysis of network indicators of banks in view of

Chart III.3.1 **Bank interconnectedness in the NBS RTGS network**



* Interbank payments (MT202 and MT103) for the period Jan-Dec 2020.
** The size of the node is proportionate to the bank's share in total turnover, the line thickness is proportionate to the value of interbank payments, while the darker colour of the node indicates a larger number of executed orders.
Source: NBS.

[131] ECB, *Stress-Testing of liquidity risk in TARGET2* (February 2017).
[132] *Macrofinancial Stress Testing – Principles and Practices,* IMF (2012).

the number and values of interbank transactions and their mutual transactions[133] carried out in the NBS RTGS payment system during 2020, it is possible to identify groups of banks whose importance in the NBS RTGS system can be determined based on their position in the network. As shown in Chart III.3.1, a small number of important nodes can be identified in the network, i.e. a small number of important participants in this payment system, which can be determined according to centrality measures (degree of an individual node, betweenness centrality, closeness centrality and prestige).

Functionality of the NBS IPS system[134] and the applied technical and technological solutions keep up with payment system trends. The system is based on the latest tested solutions in information technologies. It uses MX (ISO 20022) message format and provides high performance level, very short transaction time (in 2020 transactions in the NBS IPS system were executed in 1.2 seconds on average) and a high availability level, enabling instant payments in the 24/7/365 regime, as well as settlements through accounts kept with the NBS. The NBS IPS system executes instant payment orders worth up to RSD 300,000.

An insight into the network, structural and time perspective of interbank relations can also be gained through the NBS IPS system[135]. Chart III.3.2 singles out two banks which account for around 60% of the value and number of payments in the NBS IPS system, which can therefore be considered very important. As the NBS established the instant payments tariff policy at the lowest possible level, i.e. it created conditions for banks to provide this service to citizens and corporates at the most favourable conditions, a further rise in the number of payments in this system can be expected going forward.

Chart III.3.2 **Bank interconnectedness in the IPS NBS payment system**

* Interbank payments (MT202 and MT103) for the period Jan-Dec 2020.
** The size of the node is proportionate to the bank's share in total turnover, the line thickness is proportionate to the value of interbank payments, while the darker colour of the node indicates a larger number of executed orders.
Source: NBS.

[133] January–December 2020, interbank payments (MT202 and MT103).
[134] For more information, see the *Annual Financial Stability Report – 2018*, Text box 4: *New payment system in the Republic of Serbia – Instant Payments Serbia*.
[135] Information about the NBS IPS system is available on the NBS website: https://nbs.rs/en/ciljevi-i-funkcije/platni-sistem/nbs-operator/ips-nbs/index.html.

Text box 5: Cyber risk from the financial stability perspective

Increasing digitalisation of financial services, and a high level of interconnectedness of financial institutions, financial markets, financial market infrastructure and their information-communication systems present the basis for amplification of the risk of cyber incidents. The global emergency brought about by the coronavirus pandemic set new standards for the business activities of remote workers. According to the World Economic Forum report, a sharp increase in the number of remote workers caused by the lockdowns, social distancing guidance and travel restrictions broadened the scope of cyberattacks and cyber frauds.[136]

Three key aspects differentiate cyber risk from other sources of operational risk – speed, scale of propagation and potential malicious activity. Interconnectedness of different information systems enables fast and wide spreading of cyber incidents. Cyber incidents are not limited by physical domain which can affect actors that are not the primary target or source of these disruptions. This risk evolved from operational risk with limited impact to risk with the potential to systemically affect financial stability and the real economy.

In its paper "Systemic cyber risk"[137], the European Systemic Risk Board presented the conceptual model of evolution and materialisation of cyber risk, as well as factors that need to be in place for a cyber incident to trigger a systemic crisis. Timely assessment of factors that need to be in place for a cyber incident to trigger a systemic crisis and cause serious and systemic financial consequences is of paramount importance, and so is the assessment of the way this may occur. General loss of confidence in the financial system and potential great financial losses are the key factors determining under what circumstances a cyber incident could escalate into a systemic crisis. It is particularly important to assess the critical point in time when a cyber incident might produce systemic implications reflected in liquidity freezes, banks runs and panic. Inclusion of cyber risk in the analysis of financial stability, as well as quantification of its potential impact might improve our understanding and capacity to mitigate this systemic risk.

Central banks and supervisors are actively developing protocols and information exchange practices to improve their ability to efficiently respond to cyber attacks. Further, safe and secure use of information-communication technologies remains the main precondition for strengthening cyber security.

The importance of information society and information security development was recognised by our authorities more than a decade ago, when the first Information Society Development Strategy in the Republic of Serbia until year 2020 was adopted. It covered all priority areas contributing to the development of information society: information security, e-communications, e-government, e-health and e-justice, ICT in education, science and culture, e-commerce, as well as business sector. Information security, covered by the Strategy, increasingly gained in significance over the previous period as the use of new technologies also brought about a rise in the appertaining risks. Therefore, in 2017 the Serbian Government adopted the Strategy for the Development of Information Security in the Republic of Serbia for the period 2017–2020, defining the principles of information security, priority areas and strategic goals related to the security of citizens, corporates and government. The drafting of the Strategy for the period 2021–2026 is underway. It will encompass both information society and information security with a view to ensuring continuity of their development and will be adjusted to the new circumstances resulting from accelerated digitalisation and development of new technologies in all segments of the society.

Cyber security during the pandemic

Due to the coronavirus-induced pandemic, the access to institutions' resources moved from the secure office environment to places like employees' homes or coworking rooms. These activities entail internet access to client or institution data, access to institutions' accounts in different networks and platforms, but also the less secured access to

[136] WEF's *'COVID-19 Risks Outlook: A Preliminary Mapping and its Implications'*

[137] https://www.esrb.europa.eu/pub/pdf/reports/esrb.report200219_systemiccyberrisk~101a09685e.en.pdf?fdefe8436b08c6881d492960ffc7f3a9

their servers or clouds. Also, unlike office environment where network administrators can control the security of all local networks, work from home entails the use of a home system with, usually, weaker protection protocols, enabling malicious individuals to access network traffic more easily. Virtual private networks, which lack appropriate protection measures, are also used for remote work, increasing potentially the risk of cyber attacks. During the pandemic, a number of phishing attacks by e-mail went significantly up[138], including keyloggers[139], as well as the distribution of software for password theft. Even though companies' information resources (laptops and phones) are used most frequently for work from home with built-in security systems, the threat is still there. Despite all precautions, an institution may easily become a victim of malicious attacks, ransomwares, information leaks, thefts of confidential data and other cyber risks. Video-conferences may also be a weak link in the cyber security chain. What the cyber attackers are counting on the most in these cases is human curiosity. That is why they use key words in relation to the crisis to induce users let in malicious software in the system by opening a certain link. Thousands of internet domains are registered daily containing words like Sars-Cov-2 or Covid-19, and links are sent to countless addresses. The goal of these malicious attacks is to induce users to click a link and thus enable access to confidential data, which would provide material benefit, such as payment card and bank account numbers, as well as personal data for which they may ask ransom.

Different measures, such as locking meetings, careful video meeting link sharing and removing undesired participants if needed, may help preserve the security of an institution. It is of critical importance that every institution be permanently and best prepared as the question is no longer if the cyber attack will occur but when it will occur. Building resilience of financial institutions' information systems is also an important factor for reducing the probability of cyber incidents. Strict IT process testing, process management and regular updates of information-communication systems are critical elements that help reduce the risk of undesired incidents. However, as the probability of a cyber incident cannot be eliminated entirely, the readily available adequate response and recovery in those cases are crucial for financial service providers and other participants in the system.

[138] Phishing is a sophisticated type of a cyber attack whereby the attacker attempts at collecting personal information by means of a spoofed e-mail message or web location.

[139] Keylogger is a software for recording keystrokes made by a user. It is one of the oldest types of malicious attacks, very popular and often used as a part of greater cyber attacks.

III.4 Real estate market

Accepting real estate as loan collateral is a widespread practice in the Serbian banking sector. The NBS carefully monitors and analyses movements in the Serbian real estate market, because they can have a significant impact on financial stability and the real economy. Despite the strong negative impact of the pandemic, especially in Q2 2020, the value of construction works performed in the territory of the Republic of Serbia in constant prices in 2020 was only 4.4% lower than in 2019. NPLs continued down which, coupled with lending growth, reduced the NPL ratio of the construction sector by around 1.1 pp in y-o-y terms.

Since the beginning of 2016, the value of real estate financed by loans insured with the National Mortgage Insurance Corporation, measured by the index DOMex, has indicated the recovery of the real estate market, with the tendency of growth. Due to the coronavirus pandemic, Q2 2020 saw oscillations, with the recovery setting in already as of Q3, reflected in increased market activity. In Q4 2020, DOMex for Serbia increased 2.3% in y-o-y terms. The average LTV ratio for total initially insured loans at end-2020 measured 64.9%, considerably below the prescribed minimum of 80%.[140]

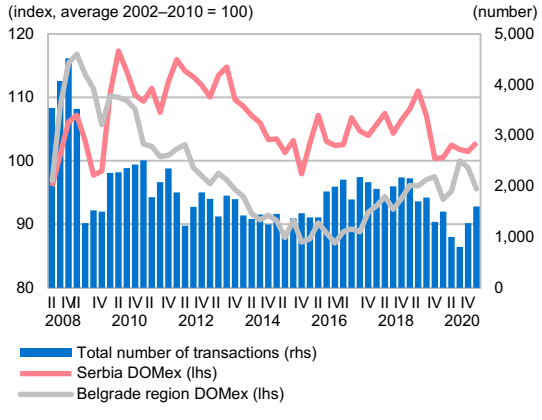
According to data of the National Mortgage Insurance Corporation, the average value of insured real estate in Serbia stood at EUR 866 per square meter in Q4 2020. Real estate was the most expensive in the Belgrade region, with prices averaging EUR 1,212 in Q4. These are the average prices of real estate financed by the loans insured with the Corporation and do not reflect the prices of real estate financed from other sources. According to data of the Republic Geodetic Authority, the average price of old housing in Serbia in 2020 equalled EUR 1,000 per square meter, and of new construction EUR 1,335 per square meter.[141]

In 2020, 4,673 apartment purchases were financed by insured loans, down by 25.4% compared to 2019 (6,266) and more than three times fewer than in 2008 (15,650), which saw the highest real estate turnover since DOMex monitoring began.[142] Of the total number of apartments financed by insured loans, around one third (1,515 apartments, or 32.4%) were in the Belgrade region.

Based on the data of the Republic Geodetic Authority, the total volume of financial assets in the real estate market in 2020 amounted to over EUR 4.2 bn, with apartment purchases accounting for the dominant share (55%). At end-2020, in the apartment market, the greatest volume of financial assets referred to Belgrade – a total of EUR 1.4 bn, or 62% of the total volume of financial assets in the Serbian apartments market.

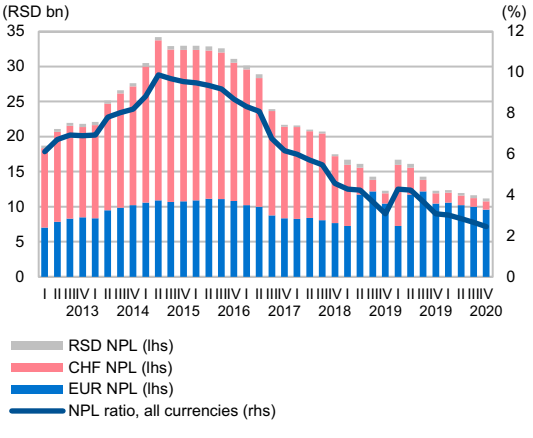
The real estate turnover was under the impact of both demand- and supply-side factors. The results of the bank

Chart III.4.1 **Real estate index DOMex and total number of transactions**



Source: National Mortgage Insurance Corporation.

Chart III.4.2 **Housing NPLs**



Source: NBS.

[140] For loans approved within the measures of government support to specific categories of natural persons or loans approved to first-time home buyers, LTV equals 90%.

[141] https://rgz.gov.rs/content/Datoteke/masovna%20procena/2021/Godisnji%20izvestaj%202020.pdf

[142] These data do not suggest that the number of real estate transactions in Serbia went down, but only that banks reduced the number of new loans insured with the National Mortgage Insurance Corporation.

lending survey[143] show that in 2020 housing loan demand continued up, with the exception of Q2, when the strictest containment measures were in place. In banks' view, demand was driven by household needs for real estate purchases, while the general economic situation worked in the opposite direction. On the supply side, increased interbank competition and positive trends in the real estate market at end-2020 resulted in the easing of housing loan approval standards. Owing to positive trends in the real estate market and competition in the banking sector, in Q4 2020 banks loosened household credit standards for FX-indexed housing loans.

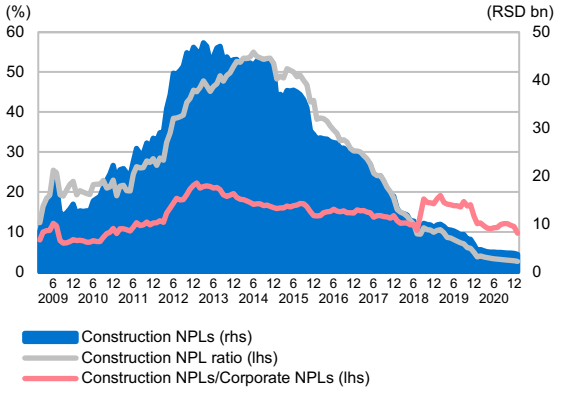
According to data of the Serbian Statistical Office for 2020, the value of construction works performed in Serbia, in constant prices, edged down by 4.4% relative to 2019, and the value of works performed on buildings increased by 4.3%. The total number of issued permits and the number of issued building permits rose by 3.6% and 5.6%, respectively, while the number of issued permits for other constructions decreased (3.5%). Compared to 2019, the number of issued construction permits for apartments went up by 6.8% and the total square surface, according to issued permits, by 1.4%.

One of the indicators of expansion of the construction sector in 2020 is lending growth in this area (higher value and number of loans), as well as formal employment growth in this sector, which reached its peak since 2012. In addition, NPLs continued down, which, coupled with lending growth, pushed the NPL ratio of the construction sector down by 1.1 pp, to its historical minimum of 2.7% in December 2020.

The year 2020 saw a fall in the number of insured mortgage loans in default for which the National Mortgage Insurance Corporation pays the maturing annuities to banks until the mortgaged property is sold (number of insured loans in default). Liabilities arising from housing loans are regularly settled and the rate of defaults on insured loans and the appertaining risk are relatively low. However, should there be an increase in defaults, a larger number of real estate properties offered in the market could trigger an excessive decline in real estate prices below their long-term equilibrium value.

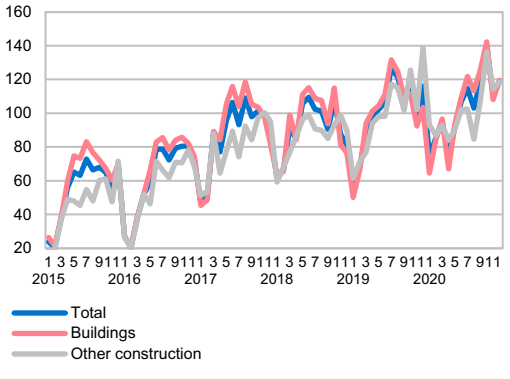
Accepting real estate as loan collateral is a widespread practice in the Serbian banking sector. An adequate real estate valuation is particularly important because banks are directly exposed to the risk of price fluctuations in the real estate market. The Law on Real Estate Valuers adopted in 2016 laid down the regulatory framework which improved legal security and enabled adequate real estate valuation. In addition, in 2017 the Ministry of Finance adopted the Rulebook on National Standards, Code of Ethics and Code of Conduct of Licensed Valuers and in 2019 the Rulebook on Professional Training for Licensed Valuers and the Rulebook on Continuous Professional Development of Licensed Valuers. These by-laws improved the provisions of the Law on Real Estate Valuers relating to the training programme and the annual programme of continuous professional development.

Chart III.4.3 **NPLs of the construction sector within corporate sector NPLs**



Source: NBS.

Chart III.4.4 **Indices of the number of issued new construction building permits**
(index, 2019 = 100)



Source: SORS.

[143] https://www.nbs.rs/export/sites/NBS_site/documents-eng/publikacije/kab/kab_rep_IV_2020.pdf

According to the information of the Ministry of Finance, the total number of registered licensed real estate valuers at end-2020 was 205.

In order to create conditions for higher quality real estate valuation, which reduces the risk of new NPLs and contributes to the development of the market of mortgage-backed NPLs, the NBS has kept for the last five years a database on valuation of mortgaged real estate and loans secured by mortgage. This database is continuously improved, in order to enable comprehensive collection, keeping and dissemination of data from the market of mortgaged real estate and access to data for the needs of the NBS, banks and licensed valuers.

With a view to facilitating access to housing loans, and hence supporting the construction industry, in June 2020 the NBS amended the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System (RS Official Gazette, Nos 34/2011, 114/2017 and 84/2020). The previous LTV restriction of 80% (90% for loans approved within measures of government support to specific categories of natural persons) was loosened for loans approved to first-time home buyers, so that banks may approve for natural persons housing loans in the amount of up to 90% of the value of the property mortgaged.

In addition to this, in August 2020, the NBS adopted the Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons (RS Official Gazette, No 108/2020), enabling banks to approve housing loans even for residential property which is not fully or to the greatest extent completed. Under the newly adopted preferential treatment, apart from fully constructed apartments, the subject of housing lending may also be residential property in construction, regardless of the degree of completion, if it is part of a building in construction within project finance of that bank, or where the holder of the construction permit is the Building Directorate of Serbia, if residential property is part of a building in construction within measures of government support to specific categories of natural persons, as well as if residential property is part of a building in construction and the building is at least 60% completed – within project finance of another bank or within a project where investor is a legal person. Also, in order to facilitate the repayment terms of housing loans approved to households, banks were allowed to offer facilities to borrowers in the form of extension of repayment term for a maximum of five years. These changes, in conditions caused by the global coronavirus pandemic, enable easier access to housing loans and support the construction industry as one of the key drivers of economic activity.

Text box 6: Residential real estate valuation in 2020

The real estate market in Serbia has experienced gradual growth over the past years. This trend continued into 2020, though with some volatility in Q2 due to the spread of the pandemic. Recovery took place already in Q3, reflected in elevated market activity. Favourable tendencies in the real estate market at home mirror the trends observed in other countries. Low interest rates on housing loans and savings step up the demand for loans, and encourage the search for alternative investment with yield rates higher than on savings, such as real estate investment. According to data of the Republic Geodetic Authority[144] and data from the database on valuation of mortgaged real estate (hereinafter: real estate database), created by the NBS in 2015, the average real estate price in Serbia increased in 2020 compared to 2019.

Since the start of bank reporting (October 2015) until late 2020, data on 132,413 pieces of real estate with appraised value of RSD 4.320.499 bn were entered in the database. Most of these data concern residential real estate[145] (66.1% of the total). In terms of appraised real estate values, commercial real estate serving as mortgage was dominant (86.2% of the total appraised value of all types of real estate entered in the database). In accordance with data on the first valuation of residential real estate serving as mortgage for housing loans entered in the database, in 2020 the average appraised value per square metre for the Republic of Serbia equalled EUR 958.

Table O.6.1 shows the average appraised value of residential real estate per square metre, and the maximum and minimum appraised value per square metre in the territory of the Republic of Serbia, by statistical region, town and municipality in the Belgrade region where residential real estate valuations were carried out in 2020.

There is a significant dispersion of real estate values across regions in the Republic of Serbia. The average appraised value per square metre in the Belgrade region of EUR 1,428 is above the double average appraised value per square metre in other regions (Vojvodina – EUR 701, Southern and Eastern Serbia – EUR 671 and Šumadija and Western Serbia – EUR 646). As the largest number of appraised real estate concerns the Belgrade region, it can be concluded that the average appraised value per square metre of real estate in the Republic of Serbia is largely determined by the movement in real estate valuations in the Belgrade region.

In the Belgrade region, there is a dispersion of the average appraised value per square metre by municipality – relatively low average valuations were made for suburban municipalities and municipalities in the periphery of the city, with the lowest value of EUR 426 recorded for the Sopot municipality versus above EUR 2,000 in the Belgrade downtown (the municipalities of Savski venac – EUR 2,308, Stari grad – EUR 2,299 and Vračar – EUR 2,157). Such dispersion of average appraised values per square metre of real estate is not present only in the Belgrade region. An almost identical situation was recorded in the regional centre of Vojvodina (Novi Sad) compared to other municipalities (Novi Sad – EUR 1,098, other municipalities of the region – EUR 467), while in the other two regions the relation between the regional centre and other municipalities was less pronounced (Niš – EUR 844, other municipalities of the region – EUR 543; Kragujevac – EUR 770, other municipalities of the region – EUR 621).

The maximum individual real estate valuation per square metre was registered in the Savski venac municipality, and the lowest in the Šumadija and Western Serbia regions.

Compared to last year, in 2020 average appraised values of real estate per square metre increased by 6.6% in the Republic of Serbia, by 11.6% in the region of Southern and Eastern Serbia, by 9.8% in the Šumadija and Western Serbia regions, by 9.6% in Vojvodina, and by 7.6% in the Belgrade region. In 2020, total 12,377 valuations were recorded at the level of the Republic of Serbia, up by 482 compared to last year. In terms of movement of the number of valuations in 2020 at the quarterly level, due to the coronavirus pandemic a significantly smaller number of valuations were carried out in Q2 (2,128), but this number increased already in Q3, with recorded 3,563 valuations. It is expected that the recorded number of valuations in Q4 2020 will go up in H1 2021 because real estate valuations are prepared for more than a month before the mortgage entry and, therefore, the submission of valuation data to the NBS is postponed.

[144] https://www.rgz.gov.rs/content/Datoteke/masovna%20procena/2021/Godisnji%20izvestaj%202020.pdf

[145] For the purpose of this Text box, residential real estate means apartments and houses appraised for the purpose of collateralization of housing loans.

Table O.6.1 **Appraised values of residential real estate in 2020**

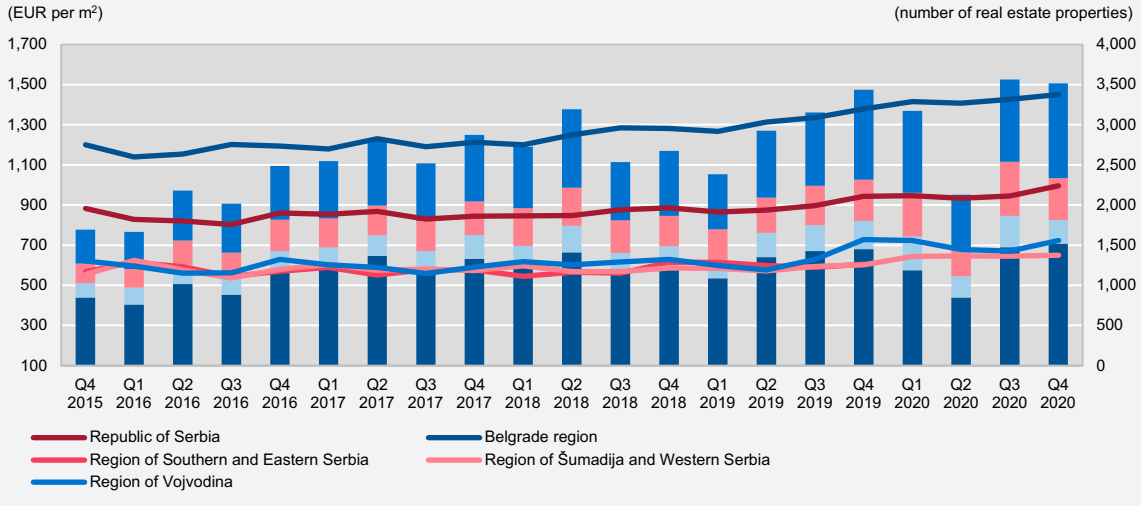
	Average appraised value per m² in 2020 (in EUR)*	Average appraised value per m2 in 2019 (in EUR)	Change compared to previous year (in %)	Minimum appraised value per m² in 2020 (in EUR)	Maximum appraised value per m² in 2020 (in EUR)	Number of appraised pieces of real estate in 2020
Republic of Serbia	**958**	**898**	**6.6**	**34**	**6,225**	**12,377**
Belgrade region	**1,428**	**1,327**	**7.6**	**88**	**6,225**	**5,028**
Belgrade – Savski venac	2,308	2,083	**10.8**	911	6,225	130
Belgrade – Stari grad	2,299	1,998	**15.1**	1,120	3,617	148
Belgrade – Vračar	2,157	1,967	**9.7**	1,010	4,106	194
Belgrade – Novi Belgrade	1,708	1,518	**12.5**	504	3,561	861
Belgrade – Voždovac	1,428	1,352	**5.6**	260	3,297	669
Belgrade – Zvezdara	1,390	1,299	**7.0**	111	3,143	823
Belgrade – Zemun	1,371	1,337	**2.5**	300	2,422	746
Belgrade – Čukarica	1,233	1,140	**8.1**	255	2,791	418
Belgrade – Palilula	1,232	1,159	**6.3**	244	3,125	399
Belgrade – Rakovica	1,096	981	**11.7**	650	2,750	265
Belgrade – Surčin	700	748	**-6.3**	88	1,636	34
Belgrade – Lazarevac	677	627	**8.1**	223	2,561	92
Belgrade – Obrenovac	606	613	**-1.1**	179	1,091	63
Belgrade – Grocka	595	607	**-1.9**	136	1,296	79
Belgrade – Mladenovac	519	558	**-7.0**	107	964	70
Belgrade – Barajevo	453	352	**28.9**	274	1,193	29
Belgrade – Sopot	426	390	**9.3**	157	776	8
Region of Vojvodina	**701**	**639**	**9.6**	**78**	**2,905**	**3,873**
Novi Sad	1,098	1,033	**6.3**	168	2,905	1,835
Other municipalities of the region	467	414	**12.7**	78	2,682	2,038
Region of Southern and Eastern Serbia	**671**	**601**	**11.6**	**119**	**2,097**	**1,368**
Niš	844	760	**11.1**	211	1,750	644
Other municipalities of the region	543	510	**6.4**	119	2,097	724
Region of Šumadija and Western Serbia	**646**	**589**	**9.8**	**34**	**2,420**	**2,108**
Kragujevac	770	699	**10.1**	198	1,332	390
Other municipalities of the region	621	570	**8.9**	34	2,420	1,718

* Preliminary estimate; during Q2 2021 banks are expected to continue to submit appraisals from 2020.

** Data based on the first real estate valuations in the process of housing loan approval.

Source: NBS.

Chart O.6.1 **Appraised real estate values and number of properties per region**



* Data based on the first real estate valuations in the process of housing loan approval.

Source: NBS.

Based on data from the real estate database, the average appraised value per square metre can be determined not only by region and municipality, but also depending on the year of construction, type of real estate (house/apartment), apartment structure etc. The results are shown in Table O.6.2.

Table O.6.2 **Average appraised values of residential real estate in 2020 (year of construction, type, structure)**

	Average appraised value per m² (in EUR)*	By year of construction		By type of real estate		By structure of apartment				
		New construction	Old construction	Apartment	House	1	1–1.5	2–2.5	3–3.5	4+
Republic of Serbia	**958**	**1,240**	**859**	**1,162**	**382**	**1,373**	**1,182**	**1,085**	**1,126**	**1,365**
Belgrade region	**1,428**	**1,622**	**1,353**	**1,491**	**668**	**1,616**	**1,436**	**1,413**	**1,446**	**1,741**
Belgrade – Savski venac	2,308	2,564	2,151	2,246	2,826	2,897	1,793	1,861	1,956	2,568
Belgrade – Stari grad	2,299	2,637	2,210	2,299	0	2,631	2,225	2,314	2,127	2,421
Belgrade – Vračar	2,157	2,526	2,026	2,157	0	2,175	2,085	1,952	2,096	2,311
Belgrade – Novi Belgrade	1,708	2,138	1,643	1,713	1,125	1,873	1,690	1,660	1,626	1,907
Belgrade – Voždovac	1,428	1,761	1,327	1,462	804	1,495	1,522	1,469	1,392	1,539
Belgrade – Zvezdara	1,390	1,425	1,356	1,396	787	1,446	1,361	1,417	1,391	1,399
Belgrade – Zemun	1,371	1,467	1,240	1,401	916	1,462	1,479	1,368	1,433	1,295
Belgrade – Čukarica	1,233	1,575	1,200	1,286	556	1,411	1,372	1,289	1,255	1,249
Belgrade – Palilula	1,232	1,206	1,239	1,243	741	1,360	1,266	1,194	1,104	1,603
Belgrade – Rakovica	1,096	1,123	1,095	1,080	1,642	1,158	1,110	1,098	1,057	1,047
Belgrade – Surčin	700	973	627	855	609	-	1,054	1,019	517	467
Belgrade – Lazarevac	677	1,009	612	818	435	742	836	834	809	730
Belgrade – Obrenovac	606	909	562	816	329	-	770	878	812	715
Belgrade – Grocka	595	954	446	844	342	972	909	868	530	309
Belgrade – Mladenovac	519	784	463	687	294	694	694	711	684	616
Belgrade – Barajevo	453	1,172	434	656	393	-	1,172	464	762	582
Belgrade – Sopot	426	0	426	539	388	-	563	492	568	-
Region of Vojvodina	**701**	**1,049**	**582**	**979**	**339**	**1,358**	**1,083**	921	**962**	**972**
Novi Sad	1,098	1,129	1,070	1,177	526	1,481	1,201	1,177	1,114	1,230
Other municipalities of the region	467	858	414	710	317	855	778	691	717	695
Region of Southern and Eastern Serbia	**671**	**855**	**598**	**753**	**389**	**1,014**	**823**	**748**	**728**	**680**
Niš	844	911	797	866	628	1,014	889	888	845	785
Other municipalities of the region	543	765	491	641	339	1,014	739	631	610	552
Region of Šumadija and Western Serbia	**646**	**948**	**563**	**788**	**352**	**1,113**	**946**	**750**	**723**	**722**
Kragujevac	770	919	671	851	422	975	905	827	842	826
Other municipalities of the region	621	962	546	771	344	1,151	958	731	697	688

* Preliminary estimate; during Q2 2021 banks are expected to continue to submit appraisals from 2020.

** Data based on the first real estate valuations in the process of housing loan approval.

Source: NBS.

The average appraised value per square metre of newly constructed residential real estate (constructed in 2018, 2019 or 2020) equalled around EUR 1,240 in the Republic of Serbia (EUR 1,622 in the Belgrade region) and was higher than the average appraised value of older real estate, which stood at EUR 859 (EUR 1,353 in the Belgrade region).

Furthermore, average appraised values per square metre of apartments (EUR 1,162 in Serbia, EUR 1,491 in the Belgrade region) were significantly higher than average appraised values per square metre of houses (EUR 382 in Serbia, EUR 668 in the Belgrade region). This can be explained by the fact that the surface of houses is usually higher than the average surface of apartments, which is why the average price per square metre of this type of real estate is significantly lower.

In terms of the structure of apartments, the highest average appraised value per square metre in Serbia was recorded for studio apartments (EUR 1,373) and apartments with four and more rooms (EUR 1,365). In the Belgrade region, the highest average appraised value per square metre was observed for apartments with four and more rooms (EUR 1,741), followed by studio apartments (EUR 1,616). In terms of apartments only, in addition to the small annual increase, in a five-year period (2016–2020), average appraised values per square metre of apartments increased by 19.1% and 23.8% at the level of Serbia and the Belgrade region, respectively. The average appraised values per square metre of apartments in new

and old construction increased by 16.5% and 18.6% at the level of Serbia, respectively, and by 28% and 21.4% in the Belgrade region, respectively.

Given that an adequate real estate valuation is an important element in the process of monitoring the credit risk in the banking sector (by using real estate as mortgage, banks are directly exposed to the price risk), the NBS carefully monitors and analyses developments in the real estate market, bearing in mind their importance for the overall stability of the financial and real sectors.

IV Financial stability

IV.1 Regulatory framework as support to financial stability

IV.1.1 Macroprudential policy

The global financial crisis of 2007–2008 revealed the high cost of financial instability for the financial system, public finances and the real economy. It also clearly showed that the financial system as a whole is a separate entity, subject to its own laws, and that in order to achieve financial stability it is not enough to ensure just the stability of individual financial institutions, but also the stability of the financial system at large.

All of this encouraged fast development of an entirely new area of public policy – macroprudential policy, which aims to limit the risks to which the financial system as a whole is exposed (the so-called systemic risks) in order to preserve financial stability. The timely development of macroprudential policy measures and instruments in the wake of the global financial crisis helped the global financial system and the financial systems of individual countries to face future crises better prepared. New capital and liquidity requirements envisaged by the Basel III[146] regulatory standard make the financial system more resilient to the consequences of the crisis both in terms of liquidity and solvency. The achievement of macroprudential policy objectives in terms of containing the build-up of risks in the financial system by applying risk containment measures (notably those targeting the structural or cyclical dimension of systemic risk) has helped mitigate the risks caused by the pandemic-induced crisis, which has hit the non-financial sector particularly hard. By contrast, it is precisely due to the application of risk containment measures, which will be discussed below, that the financial sector was better prepared for the COVID-19 crisis than was the case in 2007–2008.

Under the Law on the National Bank of Serbia (RS Official Gazette, Nos 72/2003, 55/2004, 85/2005, 44/2010, 76/2012, 106/2012, 14/2015, 40/2015 – CC Decision and 44/2018), the legal mandate of the National Bank of Serbia is to determine and implement, within its scope of competence, activities and measures aimed at preserving and strengthening financial system stability. This legal mandate enables the NBS to take measures to achieve one of its main objectives – maintaining and strengthening the stability of the financial system (Article 3, paragraph 2 of the Law on the National Bank of Serbia). To highlight the main elements of macroprudential policy and since the mandate is prescribed in general terms, in 2015 the NBS published the Macroprudential Framework[147] – a consultative document which sets out detailed macroprudential policy objectives, instruments and the decision-making process.

After the Macroprudential Framework was published, the NBS adopted regulations[148] transposing into the domestic regulatory system the regulatory standard Basel III, which

[146] For more information about Basel III, see the *Annual Financial Stability Report– 2011*, pp. 75–77. (nbs.rs/export/sites/NBS_site/documents-eng/publikacije/fs/fsr_2011.pdf).

[147] https://nbs.rs/export/sites/NBS_site/documents-eng/finansijska-stabilnost/macroprudential_framework_201503.pdf

[148] This regulatory package includes NBS decisions published in the RS Official Gazette, No 103/16 of 22 December 2016, namely: Decision on Capital Adequacy of Banks, Decision on Disclosure of Data and Information by Banks, Decision on Reporting on Capital Adequacy of Banks, Decision Amending the Decision on Reporting Requirements for Banks, Decision on Liquidity Risk Management by Banks and Decision Amending the Decision on Risk Management by Banks. These decisions transpose into domestic legislation the requirements prescribed by the relevant regulation and/or directive of the EU (Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (CRR), Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (CRD IV)).

was one of the most important regulatory responses to the global financial crisis of 2007–2008. These regulations were adopted in December 2016 and their application began in June 2017. An integral part of this regulatory package is the Decision on Capital Adequacy of Banks (RS Official Gazette, Nos 103/2016, 103/2018, 88/2019, 67/2020, 98/2020 and 137/2020). Among other things, this Decision regulates capital buffers, which represent additional CET 1 capital that banks are required to maintain above the regulatory minimum in order to contain systemic risks in the financial system. Capital buffers may be used to contain risks that are cyclical (capital conservation buffer and countercyclical capital buffer) or structural in nature (capital buffer for systemically important banks and systemic risk buffer). Also, the Decision on Liquidity Risk Management by Banks (RS Official Gazette, No 103/2016) introduced a new liquidity requirement – the liquidity coverage ratio.

The harmonisation of Serbia's supervisory and regulatory requirements with European requirements based on Basel III was also confirmed by the Commission Implementing Decision (EU) 2019/2166 on the harmonisation of regulatory and supervisory frameworks in late 2019. This Decision included Serbia in the list of countries whose supervisory and regulatory requirements for banks are considered equivalent for the purposes of the treatment of exposures in accordance with Regulation (EU) No 575/2013, which introduced Basel III standards in the EU. Based on a comprehensive analysis, it was assessed that the framework for bank operation created by the NBS was established in a manner which ensures the stability and integrity of the financial system, adequate protection of depositors and other financial services consumers, independence and effectiveness of bank supervision, and effective application of relevant international standards.

By introducing Basel III capital buffers and liquidity requirements into banking legislation, systemic risks have been recognised as a special type of risks, calling for special, tailored measures. This recognition lies at the core of the macroprudential policy which must be clearly defined, while taking into account its interaction with microprudential, monetary and fiscal policies, financial services consumer protection policy, etc. The COVID-19 crisis emphasized even more the need for coordination of the above public policies.

IV.1.2 Regulatory measures to contain systemic risks

In addition to analysing and assessing systemic risks in the financial system, each year the *Annual Financial Stability Report* lists the measures that can be undertaken to contain systemic risks.

Non-performing loans

A high level of NPLs is a systemic risk in the financial system from the macroprudential aspect and it represents a risk for individual institutions (microprudential aspect). A rising share of NPLs in total loans is a typical manifestation of a financial crisis and does not reflect on the financial system alone, but also on the real economy, as it may negatively affect lending activity, thereby slowing or postponing economic growth. A high level of NPLs may also deepen the severity and extend the duration of a financial crisis. Namely, financial resources are in that case tied down until the NPL is liquidated, which may prolong economic stagnation that goes hand in hand with the financial crisis.

Following a rise in NPLs in the aftermath of the global financial crisis, there was a need to develop an NPL Resolution Strategy (hereinafter: Strategy)[149] and action plans of the Government of the Republic of Serbia and the National Bank of Serbia, which produced outstanding results in bringing down the level of NPLs. The share of gross NPLs in total loans in the domestic banking system measured 3.7% at end-December 2020, which is a materialization of the results achieved in this field in the Republic of Serbia. Such NPL level is 18.5 pp lower than in 2015 when the Strategy was adopted and when their downsizing began and 0.4 pp lower than at end-2019. Since the domestic banking system is adequately capitalised and highly liquid, and allowances for impairment account for as much as 59% of gross NPLs (December 2020), the direct negative effect of NPLs on lending activity is currently considerably limited, so we are primarily talking about an indirect effect. This effect may play out through banks' risk aversion, manifested as a tightening of credit standards and lending conditions, such as limitation of loan amount and maturity, and also stricter collateral requirements. Risk aversion heightens particularly during a crisis, which is why Serbia, just like many other countries, undertook, as the guarantor, to settle bank receivables under corporate loans approved to finance liquidity and working capital in order to mitigate

[149] RS Official Gazette, No 72/2015.

the negative economic and financial consequences of the COVID-19 pandemic in line with the established Guarantee Scheme.[150]

As the implementation of the Strategy was successfully completed in 2018, further activities were taken to prevent new NPLs and ensure that the achieved results are sustained. To that end, in December 2018, the Government of the Republic of Serbia adopted the NPL Resolution Programme for the Period 2018–2020[151] (hereinafter: Programme) and the Action Plan for its implementation. The objective of this Programme and the implementing Action Plan is to remove, in cooperation with the NBS, the identified obstacles in the system which prevent timely NPL resolution and to establish a system that will prevent the accumulation of NPLs and negative effects on lending and, by extension, on potential economic growth. In order to achieve that objective, several key areas were identified in which (1) regulatory framework, (2) capacity building and/or (3) enforcement of regulations need to be improved, namely:

– resolution of NPLs of state-owned financial creditors,

– improvement of the bankruptcy framework, and

– activities aimed preventing new NPLs.

Presented below are recommendations the implementation of which could additionally help downsize the share of NPLs.

Drafting of plans by banks to reduce the share of NPLs. The Decision Amending the Decision on Risk Management by Banks[152] from 2016 upgraded the process of bad asset management in banks. The process was further improved by the drafting of specific plans to reduce the share of NPLs. Below are some of the elements to be included in these plans:

– a quantifiable target share of NPLs in total loans of a given bank;

– the expected timeframe for achieving this objective, which may also be defined in stages;

– ways to downsize the share of NPLs (sale, write-off, forbearance or enforced collection of receivables);

– sources of financing the implementation of the plan: recapitalisation by shareholders, or by the parent bank in case of a foreign bank subsidiary; debt or capital financing by IFIs; sale of NPLs to private asset management companies, etc.

Promoting a framework for consensual financial restructuring. The Law on Consensual Financial Restructuring (RS Official Gazette, No 89/2015) was adopted in 2015 in order to improve the procedure of consensual financial restructuring of companies. The Law created preconditions for speeding up and simplifying the current procedure and entrepreneurs were allowed to apply for the procedure.

However, in addition to regulatory improvements, active efforts need to be made to educate corporates and other stakeholders about consensual financial restructuring and to promote the procedure itself, including education about the possibility to resolve disputable relations through mediation. This is particularly significant in light of the COVID-19 crisis, when it is important to make sure everything is done so that economic entities facing financial difficulties due to the crisis should continue operating. The NBS, on its part, has always participated actively in different initiatives aimed at promoting and developing the consensual financial restructuring procedure.

Cross-border deleveraging of banks

Foreign-owned banks account for over three quarters of Serbian banking sector assets (86%). Most of these banks are members of cross-border banking groups and, prior to the global financial crisis of 2007–2008, they were financed mainly by borrowing from their parent banks. When the crisis broke out, and parent banks became financially strained, the majority of emerging markets were exposed to deleveraging. In order to avoid financial instability caused by deleveraging in host countries of international banking groups' subsidiaries, the year 2009 saw the launch of the Vienna Initiative 1.0. The initiative was aimed at maintaining the agreed level of exposure of banking groups from Western European countries toward CESEE countries. However, as the crisis went on, it became clear that maintaining exposure in the long run was not the right solution, which led to Vienna Initiative 2.0 launched in 2012 in order to coordinate the process of deleveraging of foreign banking groups. It became evident that the domestic financial system could not rely

[150] See: Decree on Establishing the Guarantee Scheme as a Measure to Support the Economy to Mitigate the Consequences of COVID-19 Pandemic Caused by SARS-CoV-2 Virus (RS Official Gazette, No 57/2020).

[151] http://www.mfin.gov.rs/UserFiles/File/strategije/2019/Program%20za%20resavanje%20problematicnih%20kredita%202018-2020.pdf

[152] RS Official Gazette, Nos 45/2011, 94/2011, 119/2012, 123/2012, 23/2013 – other decision, 43/2013, 92/2013, 33/2015, 61/2015, 61/2016, 103/2016, 119/2017, 76/2018, 57/2019, 88/2019, 27/2020 and 67/2020 – other decision.

on external sources of funding only and that domestic sources needed to be strengthened as well. At end-2008 when the global financial crisis broke out, cross-border liabilities of the banking sector accounted for 19.7% of total liabilities, while in December 2020 they fell to 12.5%. The relative decrease in cross-border liabilities was compensated for by the rise in the local deposit base. The loan-to-deposit ratio dropped from 1.14 at end-2008 to 0.80 at end-2020. Maintaining this ratio below 1 indicates that banks largely rely on domestic, stable sources of funding, such as deposits, also indicating greater resilience of the banking system, allowing it to preserve its lending activity in crisis conditions regardless of trends in foreign markets. This also limits the effect of cross-border risk spill-over, which is particularly pronounced during crises. Serbia faced the new COVID-19 crisis in a much better macroeconomic situation, reflected in greatly improved economic and financial indicators. However, cross-border exposure of the domestic banking sector in the conditions of the COVID-19 crisis should be further monitored going forward as well.

Strengthening domestic dinar sources of funding. Reliance on domestic, primarily dinar sources of funding, limits the exposure to external risks, particularly in conditions of global crises. Also, stable domestic sources of funding enable adequate risk diversification. As our financial system is bank-centric, efforts should be made to develop alternative, long-term sources of funding. An example of these sources in the domestic market are VPFs, whose potential in Serbia is insufficiently used. To develop the financial market, on 18 February 2020 the Republic of Serbia for the first time issued a 12-year dinar government bond, with a coupon rate of 4.50%. This extended the yield curve on longer maturities, enabling banks to form the price of long-term dinar loans. The above issue of government bonds also contributes to greater dinarisation of the financial system and strengthening of long-term sources of funding and, by extension, to greater resilience of the financial system to external risks.

Degree of dinarisation

A euroised financial system is exposed to the FX risk which may materialise in case of a sudden drop in the value of domestic currency relative to major world currencies. Such a scenario would lead to a very fast increase in FX liabilities, expressed in the local currency and, as most borrowers receive their income in the local currency, their debt would suddenly go up. In this way, the FX risk can give rise to system-wide solvency and liquidity problems both in the corporate and household sectors. Also, in a highly euroised economy, changes in the key policy rate cannot significantly influence the cost of servicing foreign currency-denominated debt, which diminishes the efficiency of monetary policy and limits the central bank's capacity to control this systemic risk.

To increase the level of dinarisation of the domestic financial system, the Government and the NBS signed the Memorandum on the Strategy of Dinarisation of the Serbian Financial System in 2012. Since, in the period after the conclusion of the Memorandum in 2012, macroeconomic stability was ensured and financial stability strengthened, the Government and the NBS agreed that preconditions were in place for updating the existing and defining a new Strategy. To this end, and having in mind that dinarisation is a gradual and long-term process, in December 2018 the Government and the NBS signed a new Memorandum on the Strategy of Dinarisation.[153] This Memorandum takes stock of the past measures and activities and defines additional measures and activities that would boost dinarisation further and mitigate the FX risk in the system. The Strategy of Dinarisation rests on three key pillars:

– the first pillar includes monetary and fiscal policy measures aimed at preserving macroeconomic stability and ensuring conditions for sustainable economic growth;

– the second pillar includes activities aimed at further development of the market of dinar securities and introducing new dinar products into the domestic financial market;

– the third pillar includes activities aimed at development of FX risk hedging instruments.

At end-2020, the indicators of dinarisation of household and corporate receivables and deposits reached their historical highs. The degree of dinarisation of the domestic financial system, measured by the share of dinar in total receivables from corporates and households, amounted to 37.3%, up by 4.2 pp from end-2019 (33.1%), while measured by the share of dinar in total corporate and household deposits it equalled 40.1%, which is an increase of 5 pp relative to end-2019 (35.1%). The increase in the share of dinar deposits in total corporate and household deposits was also a result of higher dinar savings by residents which continued at record-high

[153] https://nbs.rs/export/sites/NBS_site/documents-eng/publikacije/dinarizacija/Memorandum_Dinarisation_Strategy_2018.pdf

levels despite the COVID-19 pandemic (reaching a record high of RSD 92.5 bn in late December 2020).

Greater profitability of dinar savings was supported by monetary and financial stability over a longer time period (most notably, low inflation, relatively stable exchange rate and high foreign exchange reserves), relatively higher interest rates on dinar than on euro savings, more favourable tax treatment of domestic currency savings, as well as timely monetary, prudential and fiscal measures taken to alleviate the effects of the pandemic-induced crisis. In cooperation with the Government, the NBS continues to support the process of dinarisation of the Serbian financial system and the resulting profitability of saving in the local currency.

The NBS is continuously taking different monetary, microprudential and macroprudential policy measures in order to advance dinarisation. In terms of macroprudential measures, in 2011 the NBS adopted the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System (RS Official Gazette, No 34/2011). This Decision prescribes measures for mitigating risks in the financial system arising from the high share of FX or FX-indexed loans. The Decision defines the following three measures:

– 80% LTV (loan-to-value) limit for FX or FX-indexed housing loans was introduced. The Decision Amending the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System (RS Official Gazette, No 114/2017) from December 2017 relaxed the LTV limit to 90% exceptionally if a loan is approved as a government-support measure for some groups of natural persons. The Decision Amending the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System (RS Official Gazette, No 84/2020) from June 2020 relaxed this limit in a way which allows banks to approve a mortgage-backed housing loan to a natural person, if the loan amount does not exceed 90% of the value of such real estate, and the loan is approved to a first-time home buyer;

– banks are allowed to approve FX-indexed loans to natural persons, only if the currency of indexation is the euro;

– mandatory downpayment or deposit of 30% has been introduced for FX-indexed or FX loans to natural persons, but this requirement does not apply to housing loans or credit cards.

To develop the capital market by encouraging banks to hold dinar corporate bonds in their portfolios, in May 2020 the NBS included bonds issued by domestic companies with an appropriate solvency scoring (determined by the Business Registers Agency) in the portfolio of securities eligible for open market operations of the National Bank of Serbia and in the list of eligible collateral for approving the NBS's daily liquidity loans and short-term loans against a collateral of securities.

Also, the systemic risk buffer was introduced to contain the systemic euroisation risk. All banks headquartered in the Republic of Serbia whose euroisation exceeds 10% are required to maintain their systemic risk buffer at 3% of FX and FX-indexed corporate and household loans in the Republic of Serbia.

To further support financial system dinarisation, at its meeting of 12 December 2019, the NBS Executive Board adopted new measures for banks in order to change the currency structure of corporate lending to ensure a higher share of dinar loans in total loans approved in the Republic of Serbia. These measures aim at creating an environment which encourages more favourable financing of the corporate sector, particularly of SMEs – in dinars. The measures are defined in the decisions published in the RS Official Gazette, No 88/2019 of 13 December 2019:

1. Decision Amending the Decision on Capital Adequacy of Banks, and

2. Decision Amending the Decision on Risk Management by Banks.

The Decision Amending the Decision on Capital Adequacy of Banks aims to encourage banks to lend in dinars (without an FX-clause) and approve all other loans to micro enterprises and SMEs, entrepreneurs and farmers in dinars. Unlike the previous solution, which treated in the same way all bank loans to these entities regardless of the currency, by applying this measure, all dinar loans are subject to a more favourable regulatory treatment, i.e. banks will allocate less capital to cover risks in respect of dinar loans compared to FX and FX-indexed loans to these categories of borrowers. These incentives represent an additional measure to ensure more favourable conditions for lending to this most propulsive part of the corporate sector which drives the economic growth of each country.

The Decision also aims to encourage dinar lending by introducing measures to discourage the approval of new, non-purpose, non-investment, FX-indexed and FX loans to corporates, entrepreneurs and farmers. The maximum percentages of the share of these loans were introduced, the exceeding of which would be a basis for a corresponding reduction in bank capital. In addition to

representing a gradual approach, this measure also features the absence of any form of the prohibition of lending, as there are no impediments for a bank to approve a non-purpose and non-investment FX or FX-indexed loan to any client, if it is able to maintain an appropriate capital level after that, i.e. if it has enough own funds to meet regulatory requirements at all times. Due to emergency circumstances caused by the COVID-19 pandemic, the application of this measure was initially postponed until 1 January 2021, and later until 1 July 2021.[154]

The NBS's comprehensive approach to FX-indexed and FX lending has also resulted in the improvement of the regulatory bank risk management framework in this segment of operation. The Decision Amending the Decision on Risk Management by Banks defines the requirements for banks with regard to risk management concerning FX-indexed and FX loans. This has helped improve the regulatory framework in order to strengthen financial system resilience to risks which may arise from a high share of FX-indexed and FX loans in bank balance sheets.

In 2020, the NBS took the decision to trim the key policy rate on four occasions. As a result, the costs of funding for corporates, households and the government were at their lowest levels, despite the pandemic. The first decision to lower the key policy rate by 50 bp to 1.75% and narrow the interest rate corridor from ±1.25 pp to ±1 pp was taken in March. In April, June and December, the key policy rate was cut by 0.25 pp each, to 1.0%, its lowest level in the inflation targeting regime. In December, the NBS narrowed the corridor of its main interest rates from ±1.0 pp to ±0.9 pp relative to the key policy rate.

In its meeting held on 20 July 2020, the NBS Executive Board adopted the Decision Amending the Decision on Interest Rates Applied by the National Bank of Serbia in Implementation of Monetary Policy. This Decision made dinar loans approved by banks to clients under the Guarantee Scheme (in accordance with the Decree on Establishing the Guarantee Scheme as a Measure to Support the Economy to Mitigate the Consequences of COVID-19 Pandemic Caused by SARS-CoV-2 Virus (RS Official Gazette, No 57/2020)) still more favourable.

The purpose of this NBS's measure is to stimulate dinar lending and thereby offset the negative economic effects of the pandemic, while providing a further impulse to economic growth and at the same time enhancing financial system dinarisation. Subject to the above amendment to the Decision, banks approving dinar loans under the Guarantee Scheme at interest rates which are at least 50 bp lower than the maximum rate (1M BELIBOR + 2.5 pp) are paid a 50 bp higher remuneration rate by the NBS on required reserves allocated in dinars (which decreased from 100 bp during 2020 to the current 10 bp and is directly correlated with key policy rate movements), on the amount equal to the level of such loans approved at more favourable terms, and which does not exceed the amount of calculated dinar required reserves.

Considering the introduction of different insured amounts and insurance premiums for FX and dinar deposits. The Law on Deposit Insurance (RS Official Gazette, Nos 14/2015, 51/2017 and 73/2019) envisages the same insured amount for both FX and dinar deposits. As requests for insurance-based deposit payments are often filed during a systemic crisis, when the domestic currency can depreciate considerably, depositors with FX deposits are in a more favourable position than depositors with local currency deposits. Moreover, when it comes to determining the deposit insurance premium, the Law does not stipulate higher premiums for FX deposits, even though they entail a higher risk for the insurer. Namely, FX deposits entail a higher risk of occurrence of the insured event than dinar ones, as there is no FX risk involved in the investment of dinar funds.

In October 2019, the Law Amending the Law on Deposit Insurance was adopted (RS Official Gazette, No 73/2019), introducing the possibility to calculate the insurance premium also on the basis of the level of risk in the operations of each individual bank. Despite this improvement, however, the Law does not explicitly prescribe the obligation to determine a higher premium for FX deposits. Going forward, it would therefore be desirable to differentiate between premiums and sums of insured deposits, depending on the deposit currency, and thus support the process of deposit dinarisation.

Regulatory measures to contain the consequences of the coronavirus pandemic

In order to preserve the achieved level of financial system stability during the pandemic, the NBS responded by taking efficient, timely and appropriate measures. Already

[154] Decision Amending the Decision on Capital Adequacy of Banks (RS Official Gazette, No 67/20) and Decision Amending the Decision on Capital Adequacy of Banks (RS Official Gazette, No 137/20).

in March, it adopted decisions on the suspension of debt repayment (moratorium) for bank and financial lease borrowers (RS Official Gazette, No 33/2020).

The moratorium was prescribed for all persons wishing to use it (natural persons, farmers, entrepreneurs and corporates) and involved a suspension of debt repayment under loans or leases for a period of at least 90 days.

During the moratorium, the bank and/or financial lessor did not charge any default interest on past due receivables and did not initiate enforcement or enforced collection procedures or take other legal actions to collect the receivables from the borrower. Banks and financial lessors were not allowed to require the borrower to compensate any costs relating to the implementation of the adopted regulations.

The above measures were particularly carefully calibrated, taking into account the potential difficulties in debt repayment of both households and corporates and the need to overcome the negative consequences of the state of emergency caused by the COVID-19 pandemic on households and corporates.

Having in mind the complexity of the impact of pandemic-induced circumstances on households and corporates, in July 2020 the NBS determined there is scope for taking further measures to facilitate debt repayment for borrowers facing difficulties and to ensure responsible credit risk management by banks and financial lessors. A further suspension of debt repayment for bank and financial lease borrowers was prescribed in the Decision on Temporary Measures for Banks for the Purpose of Mitigating the Consequences of COVID-19 Pandemic in Order to Preserve Financial System Stability and the Decision on Temporary Measures for Financial Lessors for the Purpose of Mitigating the Consequences of COVID-19 Pandemic in Order to Preserve Financial System Stability, published in the RS Official Gazette, No 103/2020.

In this way, borrowers were allowed another suspension in the repayment of their obligations to banks and financial lessors maturing between 1 August 2020 and 30 September 2020, as well as of any outstanding obligations which matured in July 2020.

In December 2020, the Decision on Temporary Measures for Banks to Enable Adequate Credit Risk Management amid Covid-19 Pandemic and the Decision on Temporary Measures for Financial Lessors to Enable Adequate Credit Risk Management amid Covid-19 Pandemic (RS Official Gazette, No 150/2020) were adopted. They prescribed an obligation for banks and financial lessors to approve a debt repayment facility to borrowers who are unable to settle their obligations due to pandemic-related circumstances, at such borrowers' request. The facilities include loan rescheduling and refinancing, with a grace period of six months and a corresponding extension of the repayment period, in such a way that the monthly obligations of the borrower do not exceed those specified in the repayment schedule before the facilities were approved.

In addition, to ensure adequate credit risk management amid the COVID-19 pandemic, in March 2021 the NBS adopted the Decision Amending the Decision on Temporary Measures for Banks and the Decision Amending the Decision on Temporary Measures for Financial Lessors to Enable Adequate Credit Risk Management amid COVID-19 Pandemic (RS Official Gazette, No 21/2021). The above decisions extended the list of borrowers eligible for debt repayment facilities under the Decision on Temporary Measures for Banks to Ensure Adequate Credit Risk Management amid COVID-19 Pandemic and the Decision on Temporary Measures for Financial Lessors to Ensure Adequate Credit Risk Management amid COVID-19 Pandemic.

In order to contain the negative consequences of the COVID-19 crisis on bank operations, free banks' additional operational capacities and create greater possibilities for the provision of liquidity to the real sector, in May 2020 the NBS adopted the Decision Amending the Decision on Capital Adequacy of Banks, published in the RS Official Gazette, No 67/2020. This Decision postponed by six months the application of measures discouraging the approval of new, non-purpose and non-investment FX-indexed and FX loans, to corporates, entrepreneurs and farmers. The application of these provisions was postponed by another six months in November 2020 with the adoption of the Decision Amending the Decision on Capital Adequacy of Banks (RS Official Gazette, No 137/20).

In July 2020, the NBS adopted regulations to facilitate the repayment of some loans approved to households until 18 March 2020 and adopted the Decision Amending the Decision on Capital Adequacy of Banks and the Decision Amending the Decision on Managing Concentration Risk Arising from Bank Exposure to Specific Products (RS Official Gazette, No 98/2020). These amendments enabled the refinancing, by means of changing the due

date of the final loan instalment by two years relative to the current due date for the specified loan categories, if the borrower has the appropriate creditworthiness for a given product category. The new regulations come as a carefully weighed response of the NBS to a possible deterioration in the financial position of citizens who, before the onset of extraordinary circumstances brought on by the COVID-19 pandemic, took out consumer loans (including consumer loans intended for the purchase of motor vehicles), cash or other loans (except housing loans and current account overdrafts). The adopted decisions should facilitate the terms of loan repayment for citizens facing or likely to face income or job losses, but also to citizens who are not experiencing financial difficulties but want to settle their outstanding liabilities over a longer period of time than initially envisaged.

Specifically, with the application of the above regulations, banks were encouraged to offer to borrowers refinancing or change of the due date of the final instalment of consumer, cash, and other loans (other than housing loans or current account overdrafts) approved by 18 March 2020, for additional two years relative to the current repayment regime. The above facilities can be offered to borrowers even in case where their debt-to-income ratios would exceed 60% after the refinancing or change of the due date of the final instalment under the conditions envisaged by the new regulations.

Amid pronounced risks due to the deepening of the COVID-19 crisis, in August 2020 the NBS adopted the Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons (RS Official Gazette, No 108/2020), which facilitated access to finance for households. Three sets of temporary measures were prescribed facilitating access to housing loans for citizens, creating a possibility for banks to offer facilities to borrowers by extending housing loan repayment periods for maximum five years and temporarily relaxing the approval procedure for household short-term dinar loans up to a certain amount. Whereas in practice housing loans were most often approved for the purchase of 80% completed buildings, banks were now given an option to approve new housing loans for the purchase of residential buildings in construction, regardless of the degree of completion, in case of project financing by a bank, with the Building Directorate of Serbia as the holder of the construction permit or in case they are part of the measures of government support to specific categories of natural persons, as well as buildings in construction which are at least 60% completed in case of project financing of another bank or a project of a legal person investor. Also, to facilitate terms of housing loan repayment for households, banks were encouraged to offer facilities to borrowers by extending the repayment period for housing loans by maximum five years. Further, a regulatory solution was introduced allowing banks to grant a loan of up to RSD 90,000 to a natural person who does not receive his/her wage or pension via an account with that bank, with the maturity of up to two years, and to accept, as relevant evidence of employment and wage or pension of the borrower in the past three months, the signed statement on such facts issued by such borrower under full criminal and financial liability.

All decisions and measures were timely and limited in duration, and have helped preserve high capitalisation and liquidity of the banking sector. In the year marked by the pandemic, the NBS has maintained price and financial stability and met its legally defined objectives even in emergency circumstances.

Text box 7: Role of capital buffers during the coronavirus crisis

The coronavirus pandemic caused a very specific crisis which, unlike the previous ones, is all-encompassing – it has struck all countries and all categories of population. The ongoing crisis affects all global economies and gives rise to significant uncertainty in the financial sector. Experience from the previous crises showed that the shocks leading to a shortage of capital and liquidity problems with banks can cause a decrease in lending activity and, in turn, a further fall in economic activity. When faced with shocks that affect their solvency or liquidity, undercapitalised banks are prone to deleverage or sell their assets (receivables) at extremely low prices. Still, the financial system is today much more resilient to potential shocks and risks, thanks to the regulatory reforms implemented after the global financial crisis of 2008. One of the reasons for this are capital buffers – additional Common Equity Tier 1 capital that banks are obligated to maintain above the prescribed regulatory minimum. Capital buffers are defined by the Basel III regulatory standard and their application at the EU level has been possible since 2013, when Capital Requirements Directive IV 2013/36/EU (CRD IV) was adopted.[155] The advantages of introducing capital buffers are reflected in banks' increased resilience to losses, reduction of excessive or underestimated exposures, and restriction of the distribution of capital. Unlike the prescribed minimal indicators of capital adequacy, banks that do not maintain the prescribed capital buffers are only subject to restrictions for the distribution of profit in the form of dividends, hence in crisis conditions capital buffers can be used to encourage lending and reduce bank losses. These are macroprudential instruments that aim to limit systemic risks[156] in the financial system. Since systemic risk is two-dimensional (having a structural dimension, stemming from mutual relations among financial institutions, and a cyclical dimension, that varies through time and is dependent on the phase of the financial cycle), capital buffers can be used to limit the risks that can be cyclical (capital conservation buffer – CCoB, and countercyclical capital buffer – CCyB) or structural (capital buffer for a systemically important bank and systemic risk buffer).

As the coronavirus pandemic is a cyclical risk, countercyclical instruments are the tools of first resort for mitigating the effects of the crisis. The CCyB is primarily used for encouraging lending in a crisis period. The aim of introducing the CCyB is precisely to mitigate the procyclicality of the financial system. By introducing this instrument, additional capital buffers are created over a period of pronounced credit growth which could be released once systemic risks have materialised, i.e. during a crisis. This way, the CCyB enables sustainable lending to the economy during a period of slumped economic activity, whereby the resilience of the banking system is increased, and the possibility of financial crisis reduced, i.e. the consequences of a crisis are mitigated. The CCyB rate can be between 0% and 2.5% of risk-weighted assets, and is determined based on the deviation of the share of credit in GDP from the long-term trend, i.e. the credit-to-GDP gap, which is at the same time the indicator of the position of the financial cycle. According to recommendations of the ESRB,[157] determining the rate of this indicator is based on the level of the deviation, and the threshold for introducing a positive rate is the value of +2 pp. Though it is thought that the deviation of the share of lending activity in GDP from its long-term trend is the best indicator of credit growth sustainability, it does have some flaws, particularly in developing countries. Therefore, the ECB recommends tracking other indicators as well,[158] such as the output gap, real credit growth, share of the current and capital account deficit in GDP, share of the financial account in GDP, banks' external debt and others. When first introducing the CCyB rate at a level above 0%, as well as whenever this rate is raised, it is necessary to set the date by which banks are obligated to implement the higher rate, taking into account that the date must not be later than 12 months from the date of publishing, and if the date is shorter than 12 months, this has to be justified by emergency circumstances.

Though it was possible to apply the CCyB at the EU level ever since 2013, only a small number of states has done so. Even after the mandatory CCyB was introduced as of 2016, most EU states introduced the CCyB rate of 0% aware

[155] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:176:0338:0436:EN:PDF

[156] Systemic risk is the risk of disturbance in the provision of financial services in a financial system, which may have serious adverse consequences on the real economy.

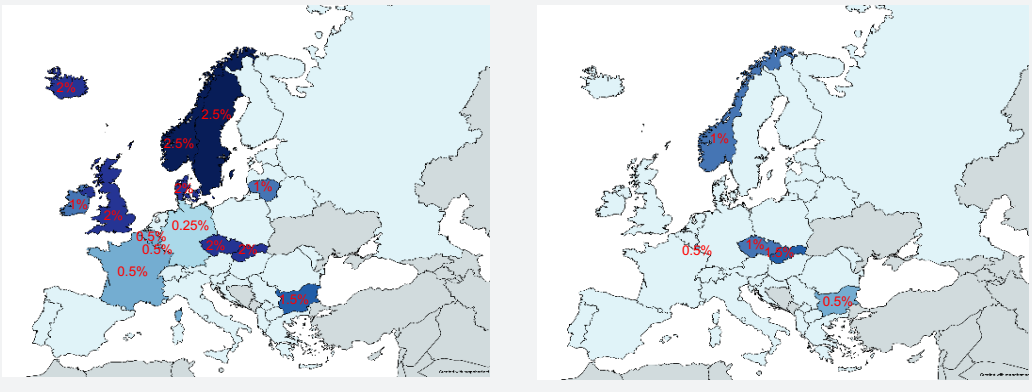
[157] https://www.esrb.europa.eu/pub/pdf/recommendations/140630_ESRB_Recommendation.en.pdf[158] https://www.ecb.europa.eu/pub/pdf/other/2011-01-14_eurosystem_reply_to_consultation_on_countercyclical_capital_bufferen.pdf

[158] https://www.ecb.europa.eu/pub/pdf/other/2011-01-14_eurosystem_reply_to_consultation_on_countercyclical_capital_bufferen.pdf

of the state of the financial cycles at that moment and the fact that the CCyB rate depends on credit growth. It was only as of 2018, when we witnessed accelerated lending activity, that this instrument was used with a greater intensity. Until end-2019, as many as 11 European countries applied the CCyB rate above 0% (Norway and Sweden – 2.5%, Iceland – 1.75%, the Czech Republic and Slovakia – 1.5%, Denmark, Ireland, Lithuania and the United Kingdom – 1%, Bulgaria – 0.5% and France – 0.25%), while four other countries announced the introduction of this capital buffer in 2020, with the rate above 0%. However, in response to the spread of the coronavirus pandemic, by end-April 2020, 13 countries mitigated their requirements for maintaining the CCyB (Chart 1). Belgium, Denmark, Germany, France, Ireland, Iceland, Lithuania, Sweden and the United Kingdom completely abolished the obligation to maintain the CCyB, while Bulgaria, the Czech Republic, Norway and Slovakia lowered its rate.[159] This way, the regulators tried to ease the pressure on banks to limit the provision of financial services, notably lending, amid the present uncertainty, in order to make sure that the financial system remains a source of support to the real economy. By end-2020, the Czech Republic and Slovakia lowered their CCyB rates further, hence at the end of the year, only five countries continued to apply the CCyB with a rate above 0% (Norway and Slovakia – 1%, and Bulgaria, the Czech Republic and Luxembourg – 0.5%).

Chart O.7.1 **Announced rates of the countercyclical capital buffer**

(last known rates as at 31 Dec 2019) (last known rates as at 30 Apr 2020)



Sources: ESRB and central banks of European countries.

Though the release of the CCyB improved the credit potential of banks during the pandemic, it turned out that in that moment, this capital buffer did not ensure sufficient capital reserves given that a number of states did not apply a rate higher than 0%. Consequently, discussions ensued about the need to apply the CCyB rate above 0% even in normal conditions.[160] This would establish sufficient reserves that could be used in the event of a sudden shock, as was the case with the coronavirus pandemic. In order to support the smooth functioning of banks' lending activity, some countries where the CCyB had not been established before the outbreak of the pandemic released the capital created in other capital buffers, i.e. the systemic risk buffer and capital buffer for a systemically important bank, though they were mainly intended for the suppression of structural, and not cyclical risks.

The systemic risk buffer (SRB) is a macroprudential instrument that affects long-term, non-cyclical systemic risks. Though this instrument is not intended for mitigating the effects of cyclical risks, such as the coronavirus pandemic, regulators in some countries lowered the rates or entirely abolished the implementation of this capital buffer. They were able to do that because this is a very flexible instrument whose implementation is not mandatory, and regulations do not provide special criteria for determining risks which would mandate the introduction of this instrument. Also, it can be

[159] Besides the listed countries, Switzerland also mitigated the sectoral CCyB, which was applied only on residential real estate with a 2% rate, by lowering the rate to 0%.

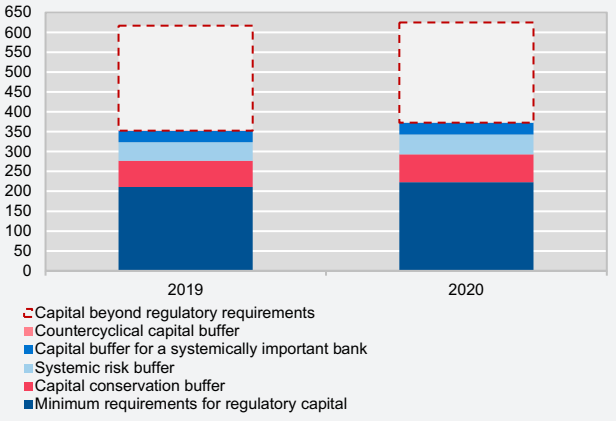
[160] European Systemic Risk Board (ESRB) "A Review of Macroprudential Policy in the EU in 2019" (2020).

introduced for one bank, several banks or all banks, with a single rate or with differential rates. According to ESRB data, at end-2019, as many as 17 EU states prescribed the obligation of maintaining the SRB. The reasons for introducing it were different – some countries used it instead of the capital buffer for a systemically important bank,[161] others due to risks associated with the openness of their economies, high share of NPLs, high concentration of the banking sector, etc. By end-March 2020, six member states mitigated the prescribed maintenance of the SRB. Finland and Hungary abolished, i.e. suspended the obligation to maintain this capital buffer, while Estonia and Poland set its rate at 0%. The Netherlands lowered the prescribed SRB rates, and Denmark did the same with the SRB rates prescribed for the Faroe Islands. In addition, Ireland decided to postpone the announced introduction of the SRB.

The capital buffer for a systemically important bank is a macroprudential instrument which imposes an obligation on banks identified as systemically important[162] at the national level to maintain additional Common Equity Tier 1 capital at the level of 0% to 2% of the bank's risk-weighted assets. Though all countries are obligated to identify systemically important banks, they, however, do not have an obligation to prescribe the level of the capital buffer for them. Also, considering that the rate is limited to the maximum of 2%, or even 1% if the bank is a subsidiary of a global systemically important bank, many countries applied the SRB concurrently with the capital buffer for a systemically important bank. To suppress the negative effects caused by the coronavirus pandemic, in April 2020 six countries mitigated the requirements for the capital buffer for a systemically important bank. Hungary abolished all requirements for maintaining this capital buffer, while Finland and the Netherlands abolished them partially, whereas Cyprus, Lithuania and Portugal extended the deadline for phasing in the prescribed rates for the capital buffer for a systemically important bank.

Capital buffers have been applied in Serbia since 30 June 2017:[163] capital conservation buffer of 2.5% of risk-weighted assets; countercyclical capital buffer, with the 0% rate set for Serbia; capital buffer for a systemically important bank, which requires banks identified as systemically important at the annual level to maintain their capital at 1% or 2% of their risk-weighted assets; and systemic risk buffer at 3% of total domestic FX and FX-indexed loans approved to corporates and households in Serbia. The Serbian banking sector is highly capitalised, therefore banks, besides the capital required for the fulfilment of regulatory requirements, including requirements for maintaining capital buffers, also dispose with significant additional capital reserves (Chart 2). In addition, the quality of capital is high – as much as 96% of the regulatory capital is made of top-quality Common Equity Tier 1 capital. As one way to respond to the coronavirus pandemic, in August 2020 the NBS adopted the Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons[164] which, inter alia, encourages banks to approve housing loans without having to wait for the residential facility to be completed in its entirety or for the most part. The Decision envisages that banks may use a portion of the funds they normally allocate for the capital conservation buffer and the systemic risk buffer and instead finance this form of lending. The adopted measure enabled citizens easier access to housing loans and endorsed the construction industry. The measures are temporary, and banks will be able to implement them until end-2021.

Chart O.7.2 **Banking sector's capital structure**
(RSD bn)



Source: NBS.

[161] The new CRD V directive changed the manner and rates for maintaining the capital buffer for a systemically important bank, due to which a number of countries that had used the SRB instead of the capital buffer for a systemically important bank had to revise their capital buffers during 2020.

[162] A systemically important bank is a bank whose deterioration of financial condition or failure would have serious negative effects on financial system stability.

[163] Decision on Capital Adequacy of Banks (RS Official Gazette, Nos 103/2016, 103/2018, 88/2019, 67/2020, 98/2020 and 137/2020).

[164] RS Official Gazette, No 108/2020.

Along with other macroprudential, monetary and fiscal measures, releasing the capital buffers helped mitigate short-term effects of the coronavirus pandemic on the real economy. In addition to releasing the capital buffers, regulators also had in mind that the released capital should not be paid out as dividends, therefore most of them also issued a warning or a recommendation to banks against that. This way, by lowering the regulatory requirements, tensions were also eased and banks' procyclical behaviour was restricted. The result was the preservation of corporate and household lending, which has a positive effect on GDP and on the reduction of credit losses. It is estimated that the use of capital buffers in stress conditions can drive lending up by more than 3% and GDP by slightly more than 0.5%.[165] However, the crisis showed the importance of the CCyB, given that in the moment when the crisis broke out, only a handful of countries had built this capital buffer which regulators could use to mitigate the consequences of the crisis in the manner envisaged by regulations. Unlike the CCyB, capital buffers introduced for the sake of structural risks are not supposed to be mitigated during a crisis. Still, the purpose of these capital buffers, as macroprudential instruments, is to limit unexpected losses and ensure smooth lending to the real economy. Thanks to timely measures, including the release of parts of capital buffers, the European banking sector did not suffer the consequences of the crisis to a greater extent, and was able to sustain even the hardest sectors of the real economy, helping them to more easily overcome the effects of the crisis and lockdowns. However, questions are cropping up as to whether the existing capital buffers will suffice to encourage lending in the long term if the crisis caused by the pandemic is prolonged. It is estimated that when the crisis broke out, at the global level banks had around USD 5.1 tn of available capital which regulators could release, while the amount of capital that banks are actually ready to use is much lower.[166] In this case, regulators will have to find a compromise between encouraging lending further by lowering capital requirements and preserving banking sector stability, given that a decrease in capital makes banks more susceptible to the impact of risks.

[165] https://www.ecb.europa.eu/pub/financial-stability/macroprudential-bulletin/html/ecb.mpbu202010_2~400e8324f1.en.html
[166] https://www.bis.org/publ/bisbull11.pdf

IV.2 Financial soundness indicators

Several methodological approaches have been used to assess the stability of the financial system in Serbia in the regional and historical context.

The comparison of financial system stability in the international context relies on selected financial soundness indicators. The stability network (Chart IV.2.1) shows five representative indicators for Serbia and the region at the end of 2008 and 2020: a) capital adequacy, b) balance sheet capital relative to balance sheet assets, c) NPL ratio, d) return on assets, and e) return on equity.

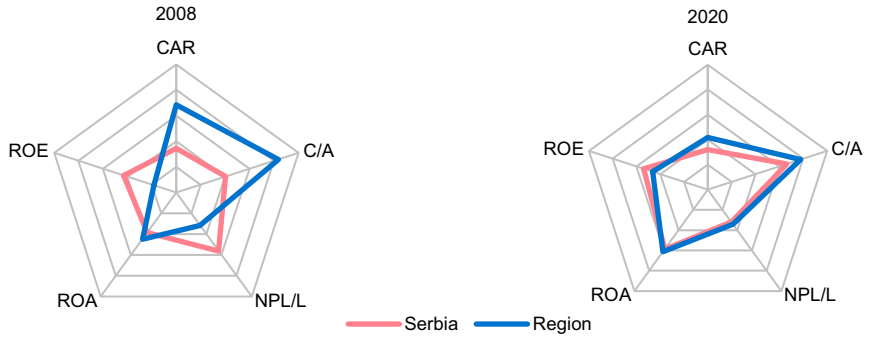
A major element of stability of the domestic banking system is the high capitalisation of the banking sector, reflected in the capital adequacy ratio, but also in the balance sheet capital to balance sheet assets ratio, which are higher than the average for the region. The share of NPLs in total loans is lower than the regional average, owing to the significant NPL reduction in the last several years. In 2020, the share of NPLs in total loans declined by 0.4 pp to 3.7% at year-end.[167] Profitability of the banking sector declined mildly in 2020, as a consequence of the coronavirus pandemic, which also weighed down on the profitability of the countries in the region. ROA was above the region's average, while ROE remained below the regional average due to the strong capital base of the Serbian banking sector.[168]

In addition to the above indicators, financial soundness is also measured by the Financial Stress Index (FSIX). FSIX is a composite index,[169] introduced to identify episodes of high financial stress, their culmination and duration, which is why it covers the relevant indicators of the Serbian financial sector and economic trends. Positive values of the indicator suggest an above-average financial stress level, while negative values point to a below-average level.

The effects of the coronavirus pandemic were alleviated by the resilience of the financial and real sector built in the prior period, as well as by numerous economic policy measures. As a result, FSIX indicated a below-average stress level throughout 2020, with a mild upward trend in Q1, due to increased volatility in the stock market. The analysis of individual components indicates that the low level of financial stress is mainly a reflection of the relatively low volatility of the exchange rate and low level of EMBI EUR for Serbia (EMBI for euro-denominated debt).

Given that the Serbian economy is small and open and, as such, susceptible to influences from the international environment, and given that the bulk of the financial

Chart IV.2.1 **Financial soundness of the Serbian banking sector compared to regional average**



Notes:

* The Chart shows standardised values of the most common financial soundness indicators: CAR – Capital Adequacy Ratio (regulatory capital to risk-weighted assets); C/A – Capital to Assets; NPL/L – gross NPLs to total gross loans; ROA – Return on Assets; ROE – Return on Equity.

** Greater distance from the network centre indicates greater risk.

*** The region refers to CEE countries: Bosnia and Herzegovina, Bulgaria, Hungary, North Macedonia, Poland, Romania, Turkey and Croatia. Region FSIs are non-weighted averages of the individual countries' FSIs.

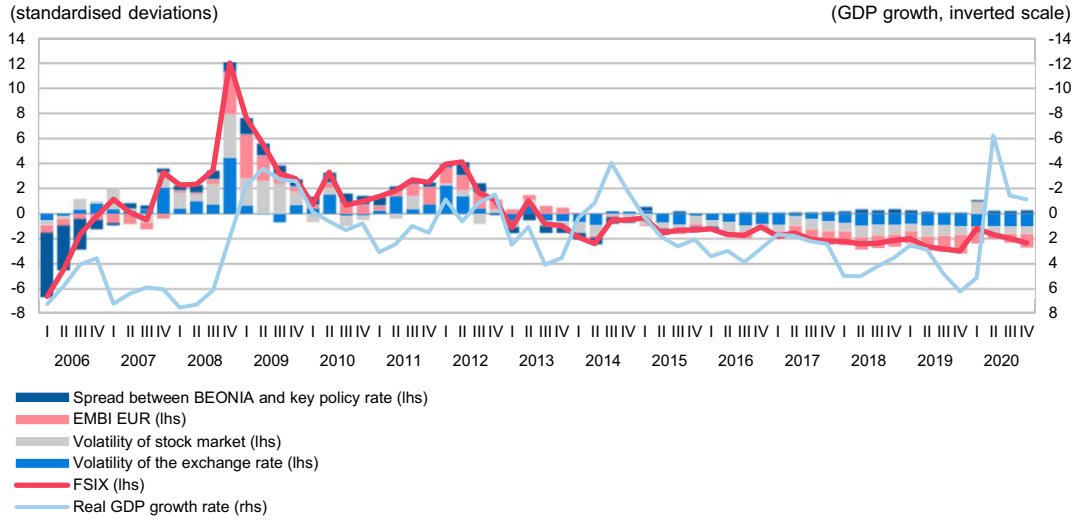
Sources: NBS and IMF.

[167] NPL indicator has been monitored since Q3 2008, when it was introduced as an integral part of the regulatory reporting requirements for banks.

[168] For more information on the characteristics of and trends in the Serbian banking sector, see Chapter II.1 Banking sector

[169] For more information on indicator methodology, see the *Annual Financial Stability Report – 2012*.

Chart IV.2.2 **Financial Stress Index (FSIX) and GDP growth**



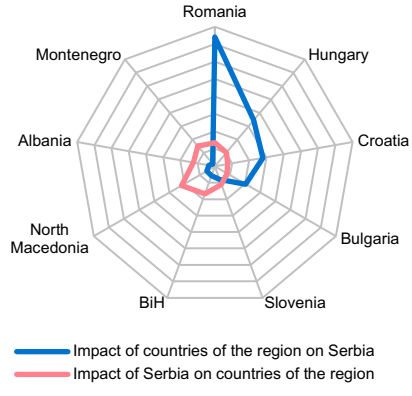
Source: NBS.

sector is foreign-owned, the common lender effect indicator is applied to measure financial crisis contagion across countries reliant on the same source of funding. The indicator's value depends on the exposure of the lender's country to the private and public sectors of the borrower's country and the share of debt to the common lender in total indebtedness of the financial sector of the borrower's country. The obtained indicator[170] is proportionate to the probability of financial crisis contagion from one country of the region to Serbia, or probability of the crisis spilling over from Serbia to other countries of the region.

The analysis is based on consolidated BIS reports on cross-border exposures of global banking groups. These reports cover a large number of banks and countries and are therefore highly suitable for comparative analyses of cross-border exposures. We analysed the exposures of banks from eleven countries to Serbia and other CESEE countries.

The results of the analysis are shown in the network in Chart IV.2.3, which indicates that in the event of a financial shock in any of the countries in the region, the greatest impact on Serbia, through the common lender channel, would be exerted by Romania, Hungary and Croatia, while Serbia would exert the greatest impact on North Macedonia, Bosnia and Herzegovina and Montenegro.

Chart IV.2.3 **Shock transmission via common lender channel**



Sources: BIS and NBS.

To capture potential risks to financial stability arising from the banking system, the banking sector stability index was created.[171] It is calculated based on indicators of solvency, credit risk, liquidity risk, profitability and exchange rate risk.

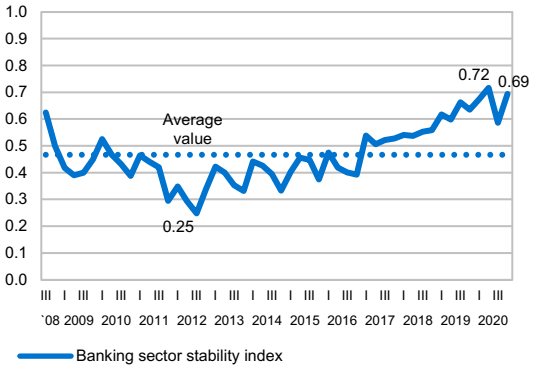
At end-2020 the banking sector stability index measured 0.69, which is an improvement relative to the end of the previous year.[172] In terms of individual components, it was the high capital adequacy, lower level of NPLs and

[170] For more information on indicator methodology, see the *Annual Financial Stability Report – 2013*.

[171] For more information on indicator methodology, see the *Annual Financial Stability Report – 2014*.

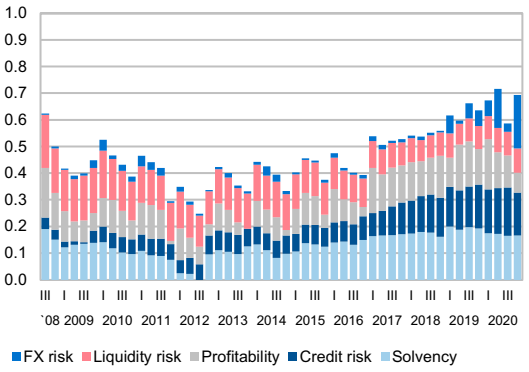
[172] Values above 0.5 indicate higher banking sector stability levels, whereas values below 0.5 indicate lower stability levels.

Chart IV.2.4 **Banking sector stability index**
(composite measure)



Source: NBS.

Chart IV.2.5 **Aggregate elements of banking sector stability index**



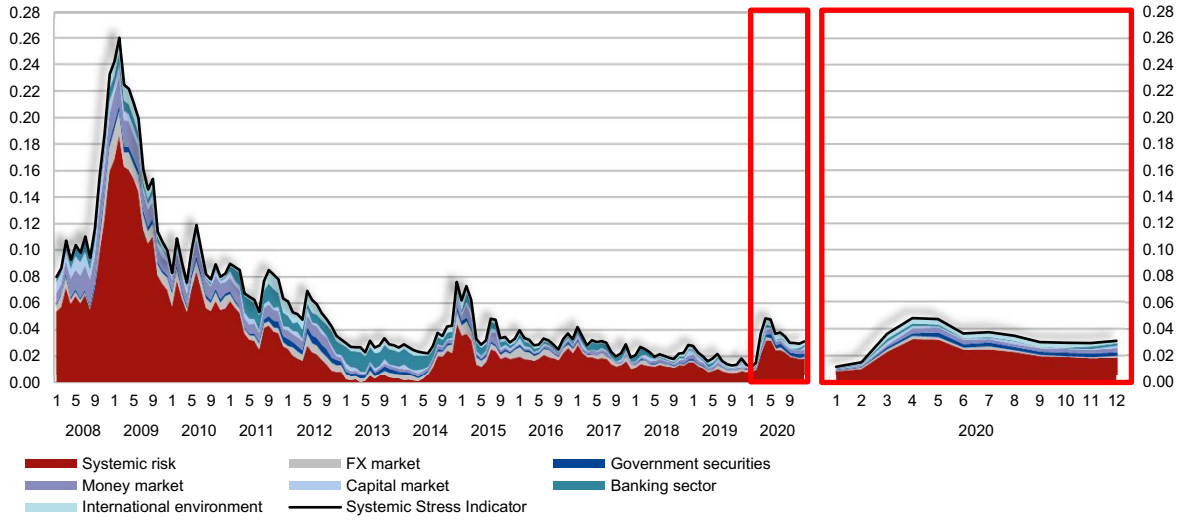
Source: NBS.

preserved profitability that contributed the most to the high level of stability of the banking sector in 2020. The growth in this indicator in 2020 can be mainly attributed to the exchange rate risk indicator, which reflects the banking sector's asset-liability currency mismatch, and which declined from the previous year.

To identify crisis periods and assess the level of systemic stress in the Serbian financial system, a methodology was developed in order to construct a composite indicator of systemic stress. This indicator is based on indicators used by the European Systemic Risk Board and the ECB to analyse the build-up of risk in various segments of the financial system and to assess the level of overall systemic stress. The indicator of systemic stress covers 25 indicators which show the magnitude of financial stress in six major segments of the Serbian financial system: the FX market, government securities market, money market, capital market, banking sector and the international environment.

After historically low levels in January 2020, the systemic stress indicator increased in March amid the spread of the coronavirus. It peaked in April and started subsiding already after Q2, when monetary, micro and macroprudential policy measures of the NBS and the Government helped diminish the negative consequences of the coronavirus and strengthen the stability of the Serbian financial system.

Chart IV.2.6 **Systemic Stress Indicator dynamics**



Source: NBS.

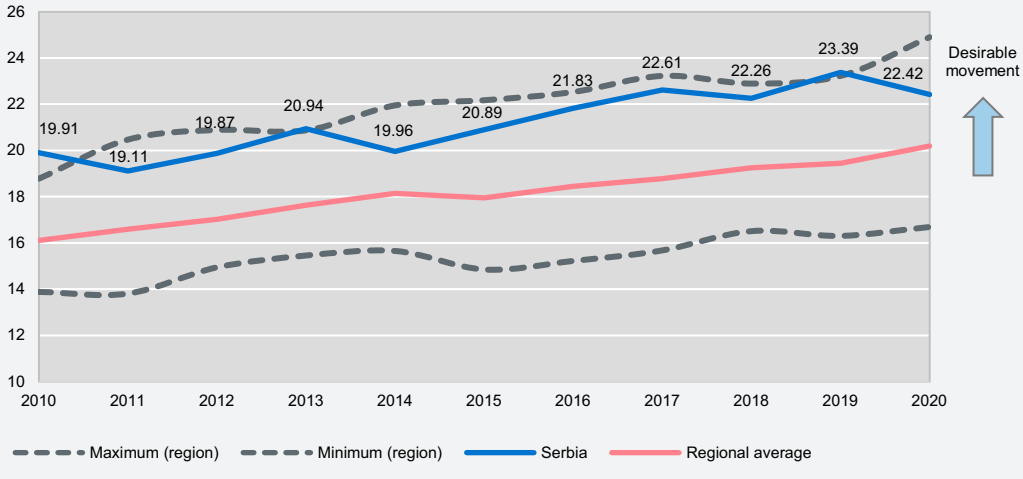
Text box 8: Analysis of financial soundness indicators for Serbia and the region

Macroprudential analysis uses macroeconomic data to identify systemic risks, thus providing the necessary information to formulate appropriate prudential measures aimed at limiting disruptions in the provision of key financial services that can have serious consequences for the real economy. Therefore, the IMF created a core set of Financial Soundness Indicators (FSI), considered relevant for all countries, as well as additional indicators which can be developed in accordance with the specific market conditions of a particular country. Indicators point to the current financial soundness and stability of financial institutions. Among other things, the IMF also developed a special Guide[173] for all countries to use the same methodology for calculating these indicators in order to achieve international comparability. The Guide is a comprehensive document that provides guidance on the concept and definitions, data sources, and methods for the compilation and dissemination of these indicators.

The trends of the most important financial soundness indicators are shown below, in comparison with countries in the region in the period 2010–2020, i.e. the range (maximum and minimum value), the average value for these countries and the value of these indicators for Serbia. This analysis covers: capital adequacy ratio (CAR), NPL ratio, return on assets (ROA) and return on equity (ROE) for selected countries in the region[173] and Serbia.

CAR is an indicator of financial soundness which is a measure of the banking sector solvency, in accordance with Basel III standards. This ratio, defined as the ratio of regulatory capital to risk-weighted assets, introduces minimum levels of capital, thanks to which it: 1) provides reserves for losses due to default on both balance sheet assets and off-balance sheet items, 2) indicates the readiness of bank owners to take risks, 3) provides quickly available resources without transaction and liquidation costs, 4) ensures sustainable expansion and financing of banks' operations, 5) enables comparability as a result of the universal calculation method, and (6) encourages less risky lending. Chart O.8.1 shows CAR movements for Serbia and the regional average. In the observed period, CAR indicator for Serbia had a very high value and moved around the maximum regional values. The continuously high value of this indicator reflected the adequately pursued micro and macroprudential policy of the NBS and the high-quality capital base of the domestic banking sector. Among other things, Common Equity Tier 1 capital (CET 1) recorded high values, indicating that more than 96% of the capital is made of the highest quality Tier 1 capital. It is important to point out that the high value of

Chart O.8.1 **CAR movements - Serbia and regional average**
(%)



Sources: IMF and NBS.

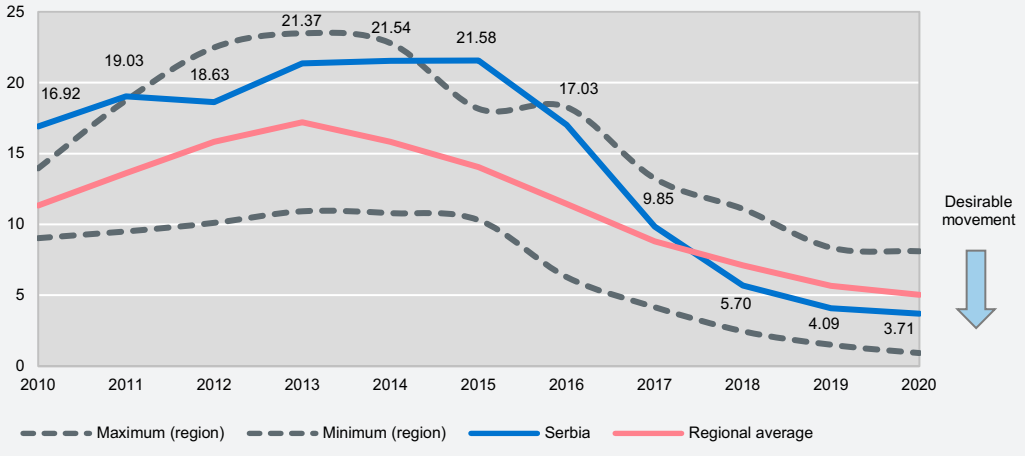
[173] *Financial Soundness Indicators Compilation Guide.*

[174] The following countries are covered within the region: Albania, Bulgaria, Bosnia and Herzegovina, Croatia, Romania, Hungary and North Macedonia.

CAR enables the fulfillment of the combined capital buffer requirement, prescribed by the Decision on the Capital Adequacy of Banks.[175]

The financial soundness indicator, which aims to determine the asset quality, is defined as the share of NPLs in total loans, where an increase in the indicator value suggests deterioration in the quality of the loan portfolio. Chart O.8.2 shows NPL movements for Serbia and the regional average. In the observed period, the NPL indicator for Serbia was higher than the average for the region until 2018, when this indicator fell below the regional average. Following the adoption of the NPL Resolution Strategy in 2015, this indicator has been on a continuous downward path, standing below the regional value as of 2018. The systematic approach to resolving NPLs and the NBS measures continued to post good results in 2020 as well. NPLs decreased slightly during 2020, but further movement of this indicator in Serbia and the region will largely depend on the course of the pandemic and the speed of economic recovery, as well as the cessation of temporary measures implemented to overcome the credit market crisis caused by the coronavirus pandemic.

Chart O.8.2 **NPL ratio - Serbia and regional average**
(%)



Sources: IMF and NBS.

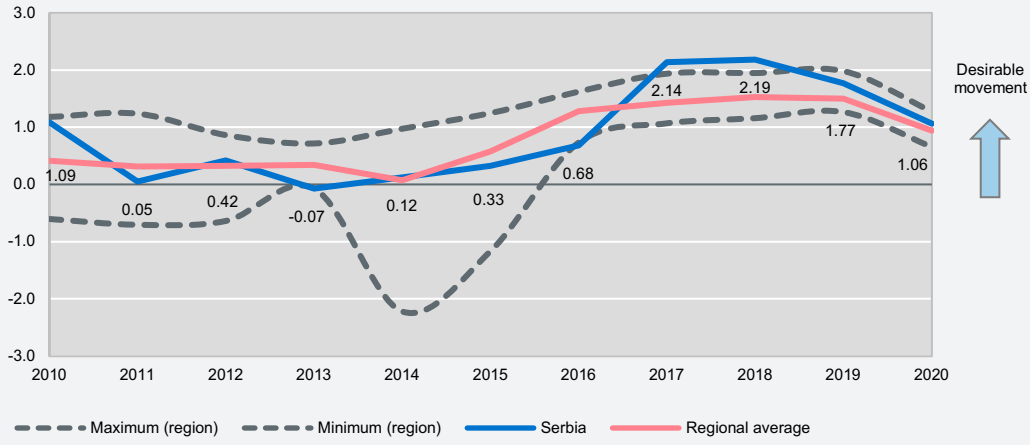
ROA and ROE are financial soundness indicators that show the efficiency of the use of assets and the profitability of the banking sector. ROA provides information on financial institutions' profitability and indicates how efficiently the revenue-generating assets are managed. ROE measures the efficiency of the use of capital and provides information on the ability to increase capital by retaining profits. Among other things, it is important to take into account the differences in the capital structure and business models across countries, which affect the business performances of banks. Banks with higher leverage, i.e. lower capital to assets ratio, will post a higher ROE. Therefore, an analysis based solely on ROE would not show the actual situation and would not cover all the risks associated with operating with a high amount of debt in the capital structure. In the period 2011–2015, ROA was mostly around the region's average. Starting with 2017, this indicator moved around the upper bound of the region's value. In the observed period, ROE stood slightly below the region's average due to the higher level of capital than the level recorded in the region. In 2020, banks in Serbia and the region operated with a profit, but their profitability declined slightly from the previous year as a result of the pandemic.

Financial soundness indicators show that the Serbian financial system is stable thanks to a strong banking sector and solid macroeconomic fundamentals, as well as to the effective prudential policy implemented by the NBS. Effective supervisory and macroprudential practices, which are in line with EU regulations and the best international practice, establish sound discipline within the financial sector, thus strengthening the confidence of both corporates and households

[175] RS Official Gazette, Nos 103/2016, 103/2018, 88/2019, 67/2020, 98/2020 and 137/2020.

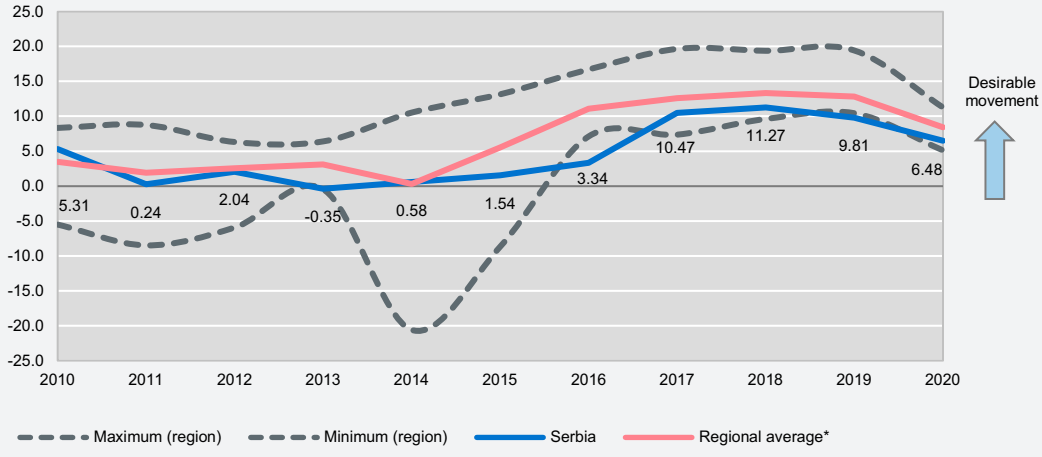
in the financial system and its stability. Owing to the achieved stability, as well as the implemented fiscal and monetary policy measures, the banking system continued to perform its function of financing corporates and households during the pandemic, thus preserving its role in supporting economic growth.

Chart O.8.3 **ROA - Serbia and regional average**
(%)



Sources: IMF and NBS.

Chart O.8.4 **ROE - Serbia and regional average**
(%)



* Latest available data for Romania.

Sources: IMF and NBS.

List of charts, tables and diagrams

Charts

Tables

Diagrams

Charts in text boxes

Tables in text boxes

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